968 St. David Street North, Fergus, ON

Transportation Impact Assessment

Paradigm Transportation Solutions Limited

2025-02
230599

ptsl.com

Project Summary

Project Number:

230599

Date and Version:

2025-02
1.0

Client:

Polocorp
379 Queen Street South
Kitchener ON N2T 1W6

Michael Poupolo

Consultant Project Team

Jim Mallett, P.Eng., PTOE
Matt Brouwer, P.Eng.
Andrew Evans

Paradigm Transportation Solutions Limited

5A-150 Pinebush Road
Cambridge ON N1R 8J8
p: 519.896.3163
    905.381.2229
    416.479.9684
www.ptsl.com

968 St. David Street North, Fergus, ON Transportation Impact Assessment

<< Original Signed By >>
Matt Brouwer, P.Eng.

Disclaimer

This document has been prepared for the titled project or named part thereof (the "project") and except for approval and commenting municipalities and agencies in their review and approval of this project, should not be relied upon or used for any other project without an independent check being carried out as to its suitability and prior written authorization of Paradigm Transportation Solutions Limited being obtained. Paradigm Transportation Solutions Limited accepts no responsibility or liability for the consequence of this document being used for a purpose other than the project for which it was commissioned. Any person using or relying on the document for such other purpose agrees and will by such use or reliance be taken to confirm their agreement to indemnify Paradigm Transportation Solutions Limited for all loss or damage resulting there from. Paradigm Transportation Solutions Limited accepts no responsibility or liability for this document to any party other than the person by whom it was commissioned and the approval and commenting municipalities and agencies for the project.

To the extent that this report is based on information supplied by other parties, Paradigm Transportation Solutions Limited accepts no liability for any loss or damage suffered by the client, whether through contract or tort, stemming from any conclusions based on data supplied by parties other than Paradigm Transportation Solutions Limited and used by Paradigm Transportation Solutions Limited in preparing this report.

Executive Summary

Content

Polocorp retained Paradigm Transportation Solutions Limited (Paradigm) to conduct this Transportation Impact Assessment (TIA) for a proposed mixed-use development located at 968 St. David Street North, Fergus, in the Township of Centre Wellington, Ontario.

This TIS includes an analysis of existing traffic conditions, a description of the proposed development, traffic forecasts for an opening-year horizon (2030), five-year horizon from opening (2035), ten-year horizon from opening (2040),and assessment of traffic impacts with recommendations to accommodate the proposed development as appropriate.

Development Concept

The preliminary concept plan shows the subject development to have up to 308 residential units, being a mix of single detached houses, street townhouses, and stacked townhouses. There is also mixed-use which could accommodate some commercial with approximately 23,680 sq. ft. GFA.

The concept plan shows one new municipal connection (Street B) to Highway 6 opposite Sideroad 18.

Conclusions

Based on the investigations carried out, it is concluded that:

- **Existing Traffic Conditions:** The study area intersections are currently operating at acceptable levels of service and within capacity
- **Development Trip Generation:** The overall development at full build-out is forecast to generate 219 new trips in the AM peak hour 301 new trips in the PM peak hour.
- **Background Traffic Operations:** As the traffic volumes increase at the study area intersections, capacity issues are identified at the following intersections:
  - Highway 6/St. David Street and Sideroad 19; and
  - St. David Street and Gordon Street.
- **Total Traffic Operations:** The capacity deficiencies identified under background conditions would be further exacerbated with

the addition of site generated traffic. Site generated traffic results in capacity deficiencies at the following intersections:

  - Highway 6 and Sideroad 18/Street B;
  - Highway 6/St. David Street and Sideroad 19; and
  - St. David Street and Gordon Street.
- Traffic control signals are not warranted for the unsignalized study area intersections.
- A southbound left-turn lane on Highway 6 at Street B is warranted with a minimum of 50 metres of storage.

Recommendations

Based on the findings of this study, it is recommended that the development be approved with the following improvements to the road network:

- Highway 6 and Sideroad 18/Street B:
  - Unwarranted traffic control signals;
  - Southbound left-turn lane with minimum of 50 metres of storage;
  - Eastbound left-turn lane; and
  - Westbound left-turn lane.

It is further recommended that the Township of Centre Wellington and the Ministry of Transportation come to an agreement on either extending the connecting link, widening Highway 6/St. David Street in the study are, or the provision of Highway 6 by-pass of Fergus to reduce the through volumes in the community.

Contents

Appendices

Appendix A	**Pre-Study Consultation**
Appendix B	**Traffic Data**
Appendix C	**Base Year Operation Synchro Reports**
Appendix D	**Pass-by Traffic Volumes**
Appendix E	**Background Development Traffic Volumes**
Appendix F1	**2030 Background Operation Synchro Reports**
Appendix F2	**2035 Background Operation Synchro Reports**
Appendix F3	**2040 Background Operation Synchro Reports**
Appendix G1	**2030 Total Operation Synchro Reports**
Appendix G2	**2035 Total Operation Synchro Reports**
Appendix G3	**2040 Total Operation Synchro Reports**
Appendix H	**Traffic Control Signal Warrants**
Appendix I	**Left-Turn Lane Warrant Nomographs**
Appendix J	**2040 Total with Improvements Operation Synchro Reports**

Figures

Tables

1 Introduction

1.1 Overview

Polocorp retained Paradigm Transportation Solutions Limited (Paradigm) to conduct this Transportation Impact Assessment (TIA) for a proposed mixed-use development located at 968 St. David Street North, Fergus, in the Township of Centre Wellington, Ontario. **Figure 1.1** shows the subject development location.

1.2 Purpose and Scope

The purpose of this study is to review the adequacy of the proposed parking supply to support the revised parking supply. The scope of the study, developed in consultation with Ministry of Transportation (MTO) staff via email in March 2024, includes:

- Documentation of current traffic and site conditions near the development;
- Estimation of the future background traffic growth in the area;
- Estimation of development site generated traffic;
- Assignment of the development traffic to the subject road network;
- Traffic forecasts for assumed full buildout (2030), five years from full buildout (2035), and ten years from full buildout (2040); and
- Identification of any operational or safety concerns and any mitigation measures that may be required to improve operations.

Appendix A contains the pre-study consultation with the MTO.

1.3 Study Area

The study area intersections include:

- Highway 6 and Nichol Road 15;
- Highway 6 and Sideroad 18
- Highway 6/St. David Street North and Sideroad 19;
- St. David Street North and Gordon Street; and
- One new municipal roadway connection to Highway 6.

paradigm TRANSPORTATION SOLUTIONS LIMITED

Location of Subject Site

968 St. David Street, Fergus
230599

Figure 1.1

2 Existing Conditions

2.1 Roadways

The main roadway under the jurisdiction of the Ministry of Transportation (MTO)[1] near the subject site include:

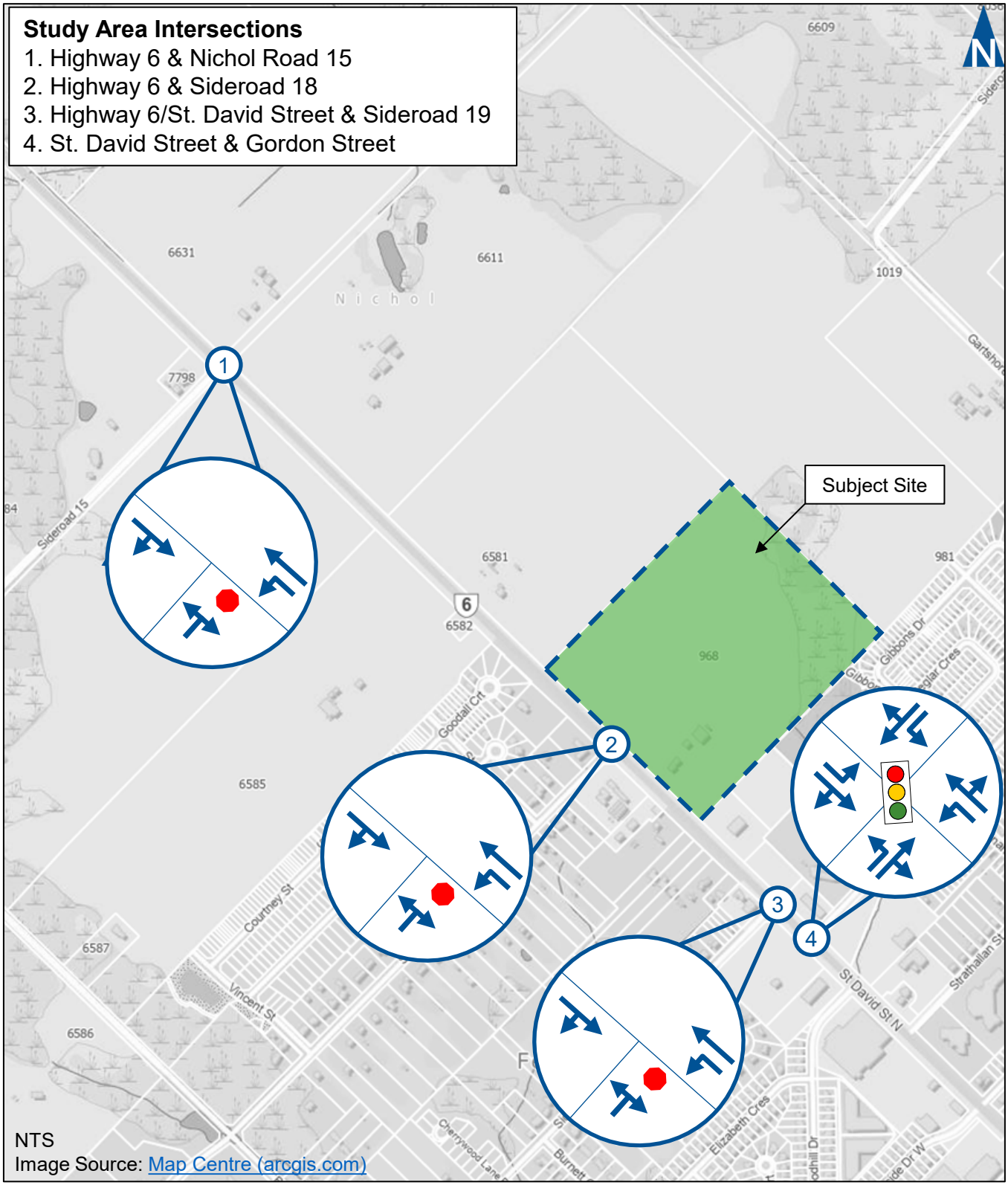
- **Highway 6** is a north-south 2B-Arterial provincial highway with a two-lane rural cross-section. Highway 6 transitions to its connecting link (St. David Street) just south of the Sideroad 19 intersection. It has a posted speed limit of 60 km/h from Sideroad 19 northwards where it transitions to 80 km/h north of Sideroad 18.

The main roadways under the jurisdiction of the Township of Centre Wellington[2] near the subject site include:

- **St. David Street North** is a north-south arterial roadway with a three-lane cross-section (one travel lane per direction and a two-way centre left-turn lane). It is the connecting link for Highway 6 within the north end of Fergus. It has a posted speed limit of 50 km/h;
- **Nichol Road 15** is an east-west collector roadway with a two-lane cross-section. It has a posted speed limit of 80 km/h;
- **Sideroad 18** is an east-west local roadway with a two-lane cross-section and posted speed limit of 40 km/h;
- **Sideroad 19** is an east-west local roadway with a two-lane cross-section and posted speed limit of 40 km/h; and
- **Gordon Street** is an east-west collector roadway with a two-lane cross-section and posted speed limit of 50 km/h.

Figure 2.1 illustrates the existing lane configuration and traffic control in the study area.

[1] Ontario Ministry of Transportation, *Highway Corridor Management Manual*, (Toronto: Queen's Printer for Ontario, September 2018), Figure 4.5.3: Access Management Classification – Southern Ontario.
[2] WSP, *Township of Centre Wellington Transportation Master Plan Final Report*, (WSP: Centre Wellington, January 2019), Figure 12: Principal Roadway Classification in Elora and Fergus.



Existing Lane Configurations & Traffic Control

968 St. David Street, Fergus
230599

Figure 2.1

2.2 Active Transportation

2.2.1 Pedestrian

St. David Street North have sidewalks on both sides of the roadway from Gordon Street southwards. There is a sidewalk in the west side of St. David Street between Gordon Street and Sideroad 19. A sidewalk on the southside of Sideroad 19 runs from St. David Street the length of the commercial plaza. Sideroad 18 has sidewalks on both side of the roadway from Highway 6 to Steele Street. Gordon Street has sidewalks on both sides of the roadway.

The signalized intersection of St. David Street North and Gordon Street has pedestrian crossing signals and pavement markings.

The subject site is noted to score a Walk Score[3] of 41 and is considered “Car-Dependent” which means that most errands require a car. Walk Score is an online tool that assigns a numerical walkability score between 0 and 100. Walk Score ranks communities nationwide based on how many businesses, parks, theatres, schools, and other common destinations are within walking distance.

2.2.2 Cycling

There are currently no on-road cycling facilities provided near the subject site. Travel by bicycle to/from the subject site is not restricted by any access-controlled roadways. Cyclists are permitted to ride on all roadways in the study area.

There are short-term bicycle parking spaces on site located close to the main entrances of the buildings.

The subject site is noted to score a cycle score of 38. This is considered “Somewhat Bikeable,” meaning that some bicycle infrastructure is available.

2.3 Transit

The Township of Centre Wellington does not currently provide a public transit service; however, the following public transit options are available in Fergus with the following:

- **County of Wellington Ride Well** – a county wide demand based public transit service available to all residents and visitors. It uses a rideshare model of operation to provide on-demand shared rides. The service operates Monday to Friday,

[3] www.walkscore.com/score/968-saint-david-st-n-fergus-on-canada

6:00 AM to 7:00 PM with bookings made from any address in Wellington County; and

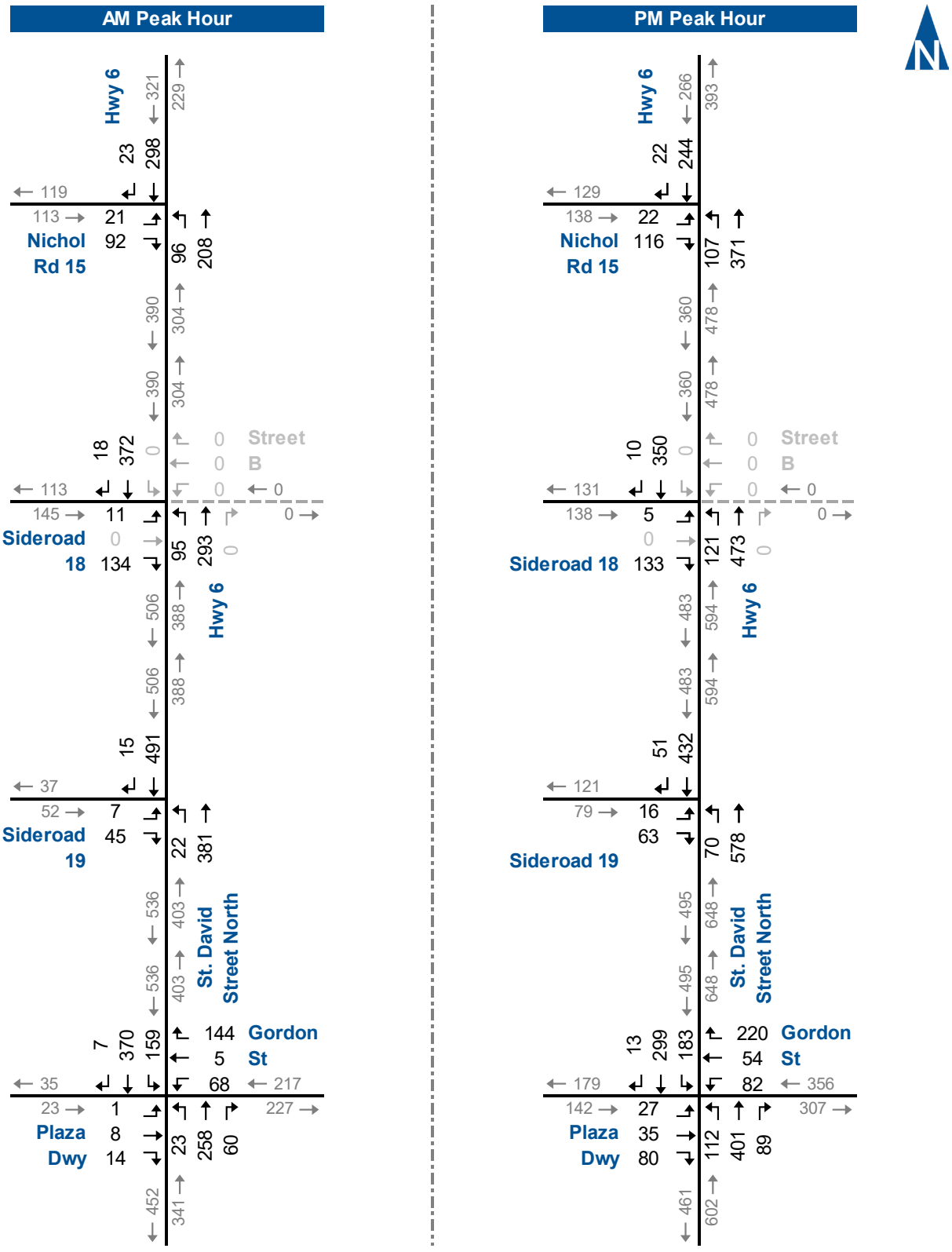
- **GOST (Guelph-Owen Sound Transit)** – a public transportation service connecting people from Owen Sound to Guelph and locations in between run by the City of Owen sound and Voyago. The service runs seven days a week with two trips southbound and two trips northbound. The only stop in Fergus is located at the Centre Wellington Community Sportsplex in the southeast end of the community.

2.4 Traffic Volumes

Turning movement counts were conducted at the study area intersections in February 2024.

Figure 2.2 illustrates the balanced base year weekday AM and PM peak hour traffic volumes.

Appendix B contains the observed traffic count and signal timing plans.



Base Year Traffic Volumes

968 St. David Street, Fergus
230599

Figure 2.2

2.5 Traffic Operations

Intersection level of service (LOS) is a recognized method of quantifying the average delay experienced by drivers at intersections. It is based on the delay experienced by individual vehicles executing the various movements. The delay is related to the number of vehicles intending to make a particular movement, compared to the estimated capacity for that movement. The capacity is based on several criteria related to the opposing traffic flows and intersection geometry.

The highest possible rating is LOS A, under which the average total delay is equal or less than 10.0 seconds per vehicle. When the average delay exceeds 80 seconds for signalized intersections, 50 seconds for unsignalized intersections or when the volume to capacity ratio is greater than 1.0, the movement is classed as LOS F and remedial measures are usually implemented if they are feasible. LOS E is usually used as a guideline for the determination of road improvement needs on through lanes, while LOS F may be acceptable for left-turn movements at peak times, depending on delays.

The operations of the study intersections were evaluated using the existing lane configurations, traffic controls and signal timing plans, and the base year traffic peak hour volumes.

The level of service conditions on the existing road network have been assessed using Synchro 11. Individual turning movements are considered critical when the volume/capacity ratio (v/c ratio) for overall intersection operations, through movements, or shared through/turning movements increased to 0.85 or above.

Table 2.1 summarizes the existing intersection operations. The entries in the table indicating the AM and PM peak hour level of service (LOS), volume to capacity ratios (V/C), and 95th percentile queues experienced.

The study area intersections are currently operating at acceptable levels of service with no specific problem movements.

Appendix C contains the detailed Synchro reports.

TABLE 2.1: BASE YEAR OPERATIONS

Analysis Period	Intersection	Control Type	MOE	Direction / Movement / Approach																	
				Eastbound				Westbound				Northbound				Southbound				Overall
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	Highway 6 & Nichol Road 15	TWSC	LOS	B		>	B					A	A	>	A		A	>	A	A
			Delay	13		>	13					8	0	>	3		0	>	0	3
			V/C	0.21		>						0.09	0.13	>			0.21	>		
			Q	6		>						2	0	>			0	>		
			Ex	-		>						115	-	>			-	>		
			Avail.	-		>						113	-	>			-	>		
	Highway 6 & Sideroad 18	TWSC	LOS	B		>	B					A	A		A		A	>	A	A
			Delay	14		>	14					9	0		2		0	>	0	3
			V/C	0.27		>						0.09	0.19				0.25	>		
			Q	9		>						3	0				0	>		
			Ex	-		>						110	-				-	>		
			Avail.	-		>						108	-				-	>		
	Highway 6/St. David Street & Sideroad 19	TWSC	LOS	B		>	B					A	A		A		A	>	A	A
			Delay	14		>	14					9	0		1		0	>	0	1
			V/C	0.12		>						0.03	0.24				0.32	>		
			Q	3		>						1	0				0	>		
			Ex	-		>						20	-				-	>		
			Avail.	-		>						19	-				-	>		
	St. David Street & Gordon Street	TCS	LOS	B	B	>	B	B	B	>	B	A	B	>	B	A	B	>	B	B
			Delay	17	17	>	17	20	18	>	18	6	13	>	13	6	13	>	11	13
			V/C	0.01	0.05	>		0.39	0.14	>		0.05	0.53	>		0.31	0.59	>		0.50
			Q	1	6	>		18	14	>		3	46	>		13	56	>		
			Ex	20	-	>		25	-	>		20	-	>		25	-	>		
			Avail.	19	-	>		7	-	>		17	-	>		12	-	>		
PM Peak Hour	Highway 6 & Nichol Road 15	TWSC	LOS	B		>	B					A	A	>	A		A	>	A	A
			Delay	13		>	13					8	0	>	3		0	>	0	3
			V/C	0.25		>						0.09	0.24	>			0.17	>		
			Q	7		>						2	0	>			0	>		
			Ex	-		>						115	-	>			-	>		
			Avail.	-		>						113	-	>			-	>		
	Highway 6 & Sideroad 18	TWSC	LOS	B		>	B					A	A		A		A	>	A	A
			Delay	13		>	13					9	0		2		0	>	0	3
			V/C	0.25		>						0.11	0.30				0.23	>		
			Q	8		>						3	0				0	>		
			Ex	-		>						110	-				-	>		
			Avail.	-		>						108	-				-	>		
	Highway 6/St. David Street & Sideroad 19	TWSC	LOS	C		>	C					A	A		A		A	>	A	A
			Delay	18		>	18					9	0		1		0	>	0	2
			V/C	0.24		>						0.08	0.37				0.31	>		
			Q	7		>						2	0				0	>		
			Ex	-		>						20	-				-	>		
			Avail.	-		>						18	-				-	>		
	St. David Street & Gordon Street	TCS	LOS	B	B	>	B	C	C	>	C	A	B	>	B	A	B	>	B	B
			Delay	20	20	>	20	21	21	>	21	7	18	>	16	8	13	>	11	16
			V/C	0.21	0.18	>		0.41	0.35	>		0.20	0.71	>		0.46	0.45	>		0.60
			Q	10	16	>		22	26	>		11	86	>		18	50	>		
			Ex	20	-	>		25	-	>		20	-	>		25	-	>		
			Avail.	10	-	>		3	-	>		9	-	>		7	-	>		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds

Q - 95th Percentile Queue Length (m)
Ex. - Existing Available Storage (m)
Avail. - Available Storage (m)

TCS - Traffic Control Signal
TWSC - Two-Way Stop Control

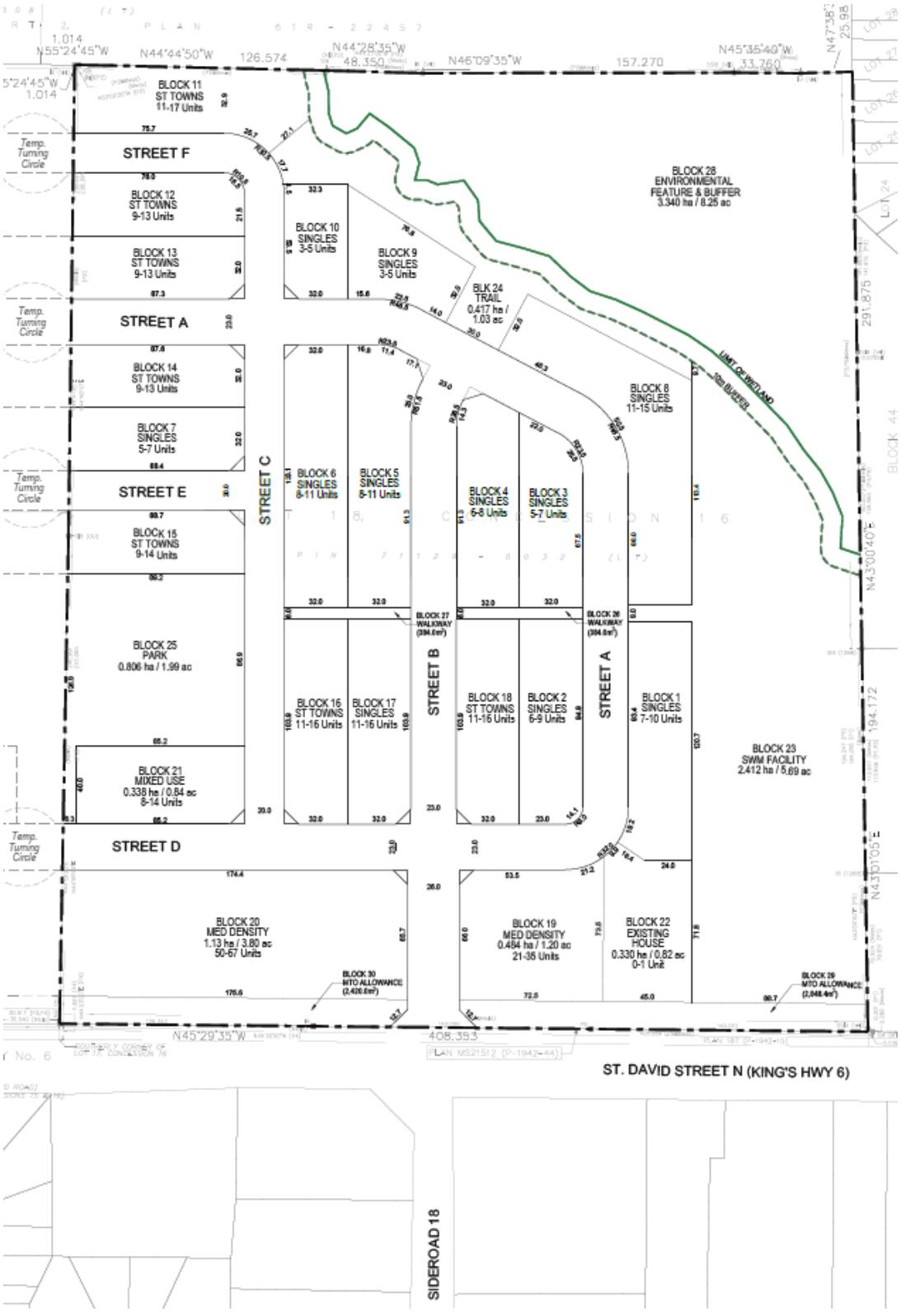
< / > - Shared Turn Lane

3 Development Description

The preliminary concept plan shows the subject development to have up to 308 residential units, being a mix of single detached houses, street townhouses, and stacked townhouses. There is also mixed-use which could accommodate some commercial with approximately 23,680 sq. ft. GFA.

The concept plan shows one new municipal connection (Street B) to Highway 6 opposite Sideroad 18.

Figure 3.1 illustrates the concept plan



NTS

paradigm
TRANSPORTATION SOLUTIONS LIMITED

Concept Plan

968 St. David Street, Fergus
230599

Figure 3.1

3.1 Trip Generation

The Institute of Transportation Engineers (ITE) *Trip Generation Manual*[4] provides rates and equations used to estimate the peak hour traffic volumes generated by the development. The following Land Use Codes (LUC) were used:

- 210 – Single-Family, Detached Homes (dwelling Units);
- 215 – Single-Family, Attached Housing (dwelling units);
- 220 – Multi-Family Housing, Low-Rise (dwelling units); and
- 822 – Strip Retail Plaza, <40k (GFA per 1,000 sq. ft.).

Table 3.1 summarizes the estimated trip generation. It is forecast that the subject development will generate approximately 219 and 301 new trips during the AM and PM peak hours.

It is noted that pass-by trips for the commercial land use in peak hour were obtained from Land Use Code 821 (Shopping Plaza 40-150k) from the ITE *Trip Generation Handbook*[5] as pass-by trips for LUC 822 (Strip Plaza, <40K) are not available.

TABLE 3.1: TRIP GENERATION FORECASTS

ITE Land Use	Units	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
210 - Single Family, Detached Housing (Dwelling Units)	88	16	50	66	55	33	88
215 - Single Family, Attached Housing (Dwelling Units)	118	14	42	56	40	27	67
220 - Multifamily Housing, Low-Rise (Dwelling Units)	102	10	31	41	33	19	52
822 - Strip Retail Plaza (<40k) (GFA/1,000ft^2)	23.7	34	22	56	78	78	156
Passby for 822					*- 31*	*- 31*	*- 62*
Net New Trips		**74**	**145**	**219**	**175**	**126**	**301**

The estimated site generated trips were distributed and assigned to the road network based on the observed traffic volumes entering and exiting the study area. **Table 3.2** summarizes the trip distribution.

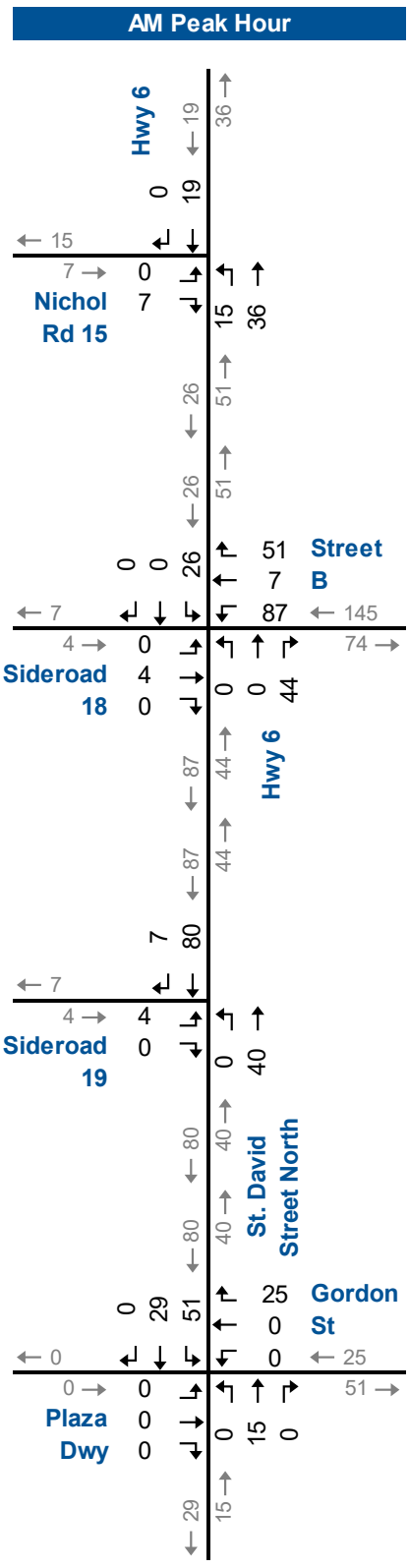
[4] Institute of Transportation Engineers, *Trip Generation Manual,* 11th ed., (Washington, DC: ITE, 2021).

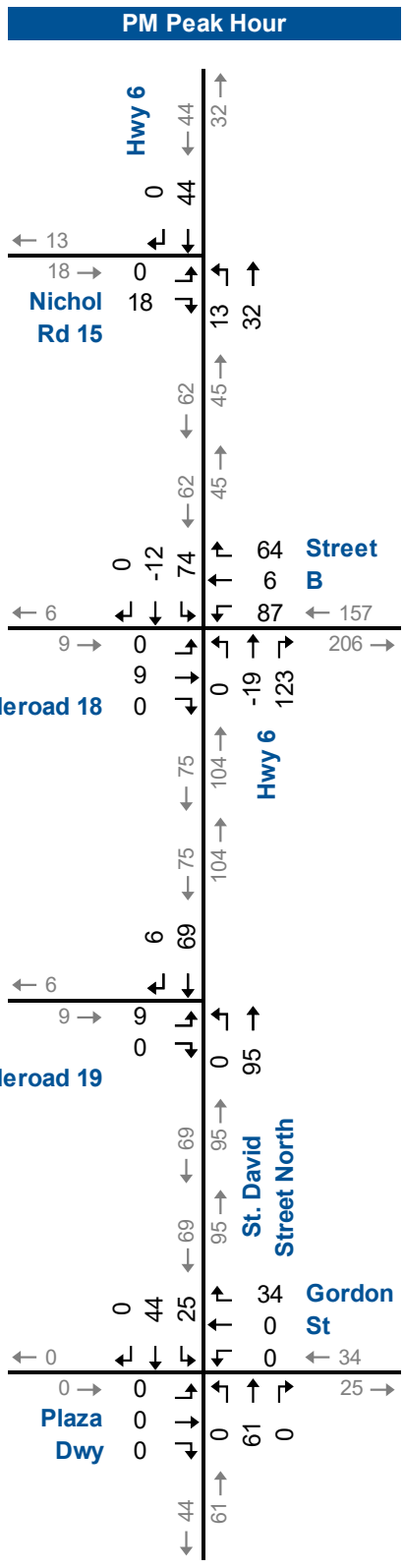
[5] Institute of Transportation Engineers, *Trip Generation Handbook*, 3rd ed., (Washington, DC: ITE, 2017).

TABLE 3.2: TRIP DISTRIBUTION

Direction	Route	AM Peak Hour	PM Peak Hour
North	Highway 6	25%	25%
West	Nichol Road 15	10%	10%
	Sideroad 18	5%	5%
	Sideroad 19	5%	5%
South	St. David Street	20%	35%
East	Gordon Street	35%	20%
Total		**100%**	**100%**

Figure 3.2 illustrates the site generated trip assignment for the AM and PM peak hours, including Passby trips. Passby trips are shown separately in **Appendix D**.





Site Generated Traffic Volumes

968 St. David Street, Fergus
230599

Figure 3.2

4 Evaluation of Future Traffic Conditions

The assessment of future traffic conditions contained in this section includes estimates of future background and total traffic volumes and analyses for the assumed full buildout year (2030) horizon, five years from full buildout (2035), and ten years from full buildout (2040) horizons. The future traffic volumes near the development will consist of increased non-site traffic volumes (background traffic), traffic generated by other developments, and the traffic forecast to be generated by the proposed development.

4.1 Future Traffic Forecasts

4.1.1 Background Growth

The non-site traffic increase is the generalized traffic growth on the study area road network. In pre-study consultation, the MTO staff confirmed a growth rate of 1.0% per annum, which was applied to the base year traffic volumes to the forecast horizon years.

4.1.2 Other Area Developments

Traffic generated from the following nearby developments have been included in the future background traffic forecasts:

- 950-961 St. David Street North[6], a mixed-use development consisting of 13,500 sq. ft. retail use and 112 townhouse units;
- 960 St. David Street North[7], a residential development consisting of 13 single detached homes and 37 townhomes;
- Centre Wellington Operations Centre[8], a new multi-department operations centre at 965 Gartshore Street;
- Dickson Drive Industrial Lands, a 360,000 sq. ft. business park. The site traffic for this development was taken from the Centre Wellington Operations Centre traffic study;
- 820 St. David Street North[9], a five-storey mixed-use development with residential units and commercial ground floor units; and

[6] Paradigm Transportation Solutions Limited, *950-960 St. David Street North Transportation Impact Study*, (PTSL: Reid Heritage Homes, May 2022).
[7] Paradigm Transportation Solutions Limited, *961 St. David Street North Transportation Study*, (PTSL: RE/MAX, April 2021).
[8] R.J. Burnside & Associates Limited, *Centre Wellington Operations Centre Transportation Study (Final Revised)*, (RJB: Centre Wellington, November 2022).
[9] Trans-Plan Transportation Engineering, *Transportation Study Proposed Mixed Use Development 820 Saint David Street North*, (TPTE: Harper Dell, October 2020).

- 935 St. David Street North; a five-storey mixed-use development with residential units and daycare on ground floor. Traffic generated from this development was derived from ITE trip rates and the study distribution shown in **Section 3.2**.

Appendix E contains the background development trip assignments.

4.1.3 Future Background Traffic Volumes

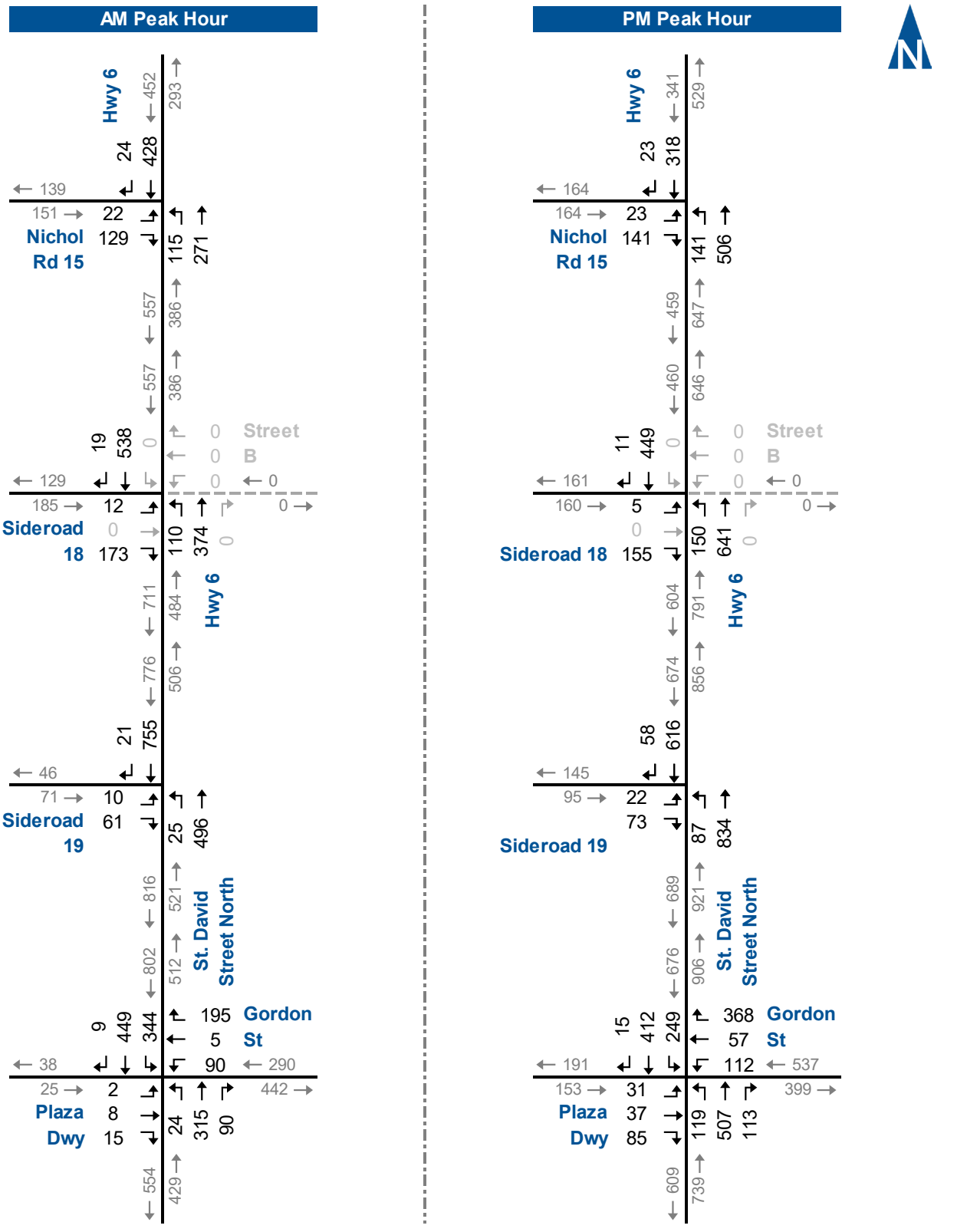
The future background traffic volumes include the non-site generated traffic growth and the traffic from the other nearby developments.

Figure 4.1 illustrates the 2030 future background traffic volumes for the AM and PM peak hours. **Figure 4.2** illustrates the 2035 future background traffic volumes for the AM and PM peak hours. **Figure 4.3** illustrates the 2040 future background traffic volumes for the AM and PM peak hours.

4.1.4 Future Total Traffic Volumes

The future total traffic volumes include the future background traffic volumes plus the site generated traffic volumes.

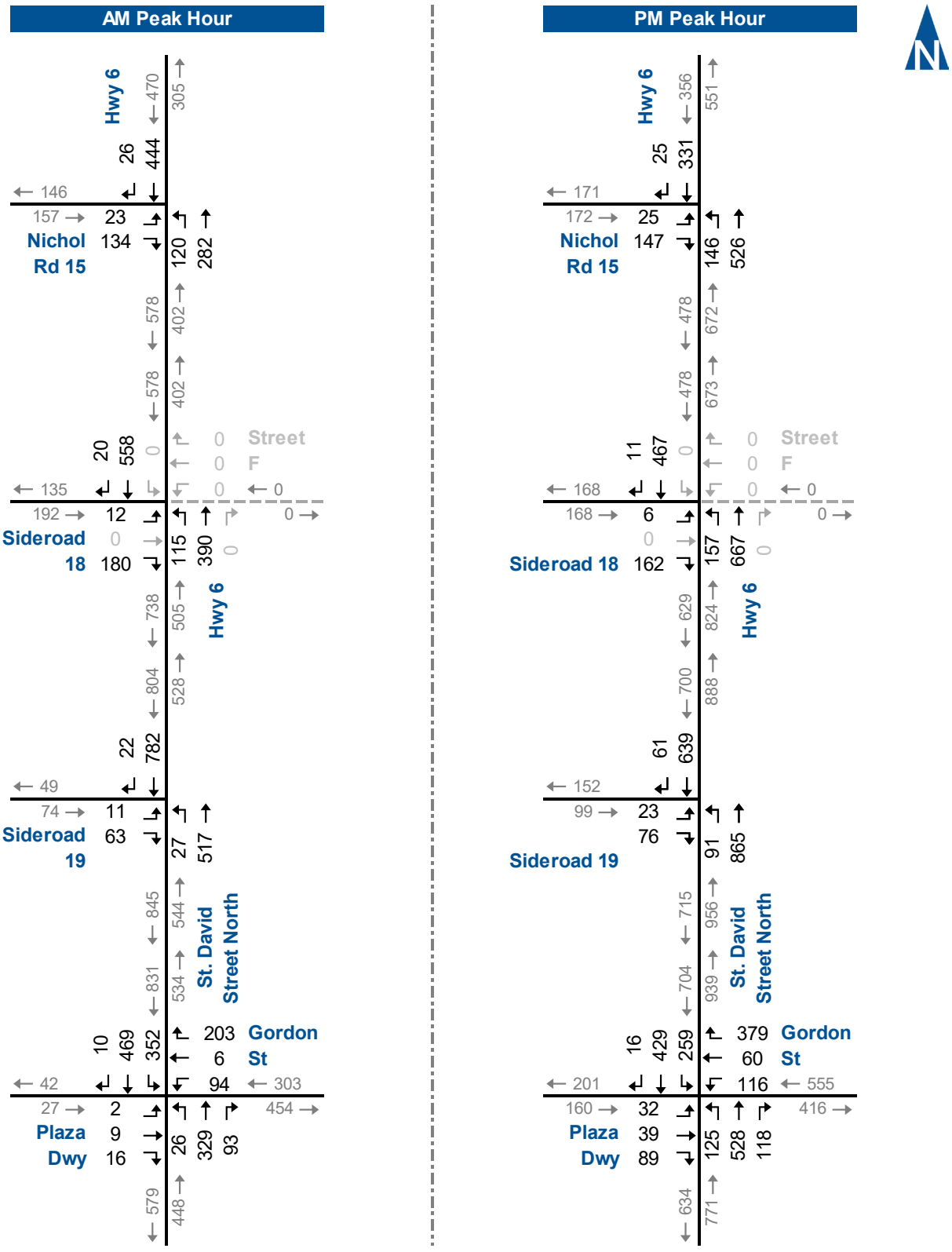
Figure 4.4 illustrates the 2030 total background traffic volumes for the AM and PM peak hours. **Figure 4.5** illustrates the 2035 future total traffic volumes for the AM and PM peak hours. **Figure 4.6** illustrates the 2040 future total traffic volumes for the AM and PM peak hours.



2030 Future Background Traffic Volumes

968 St. David Street, Fergus
230599

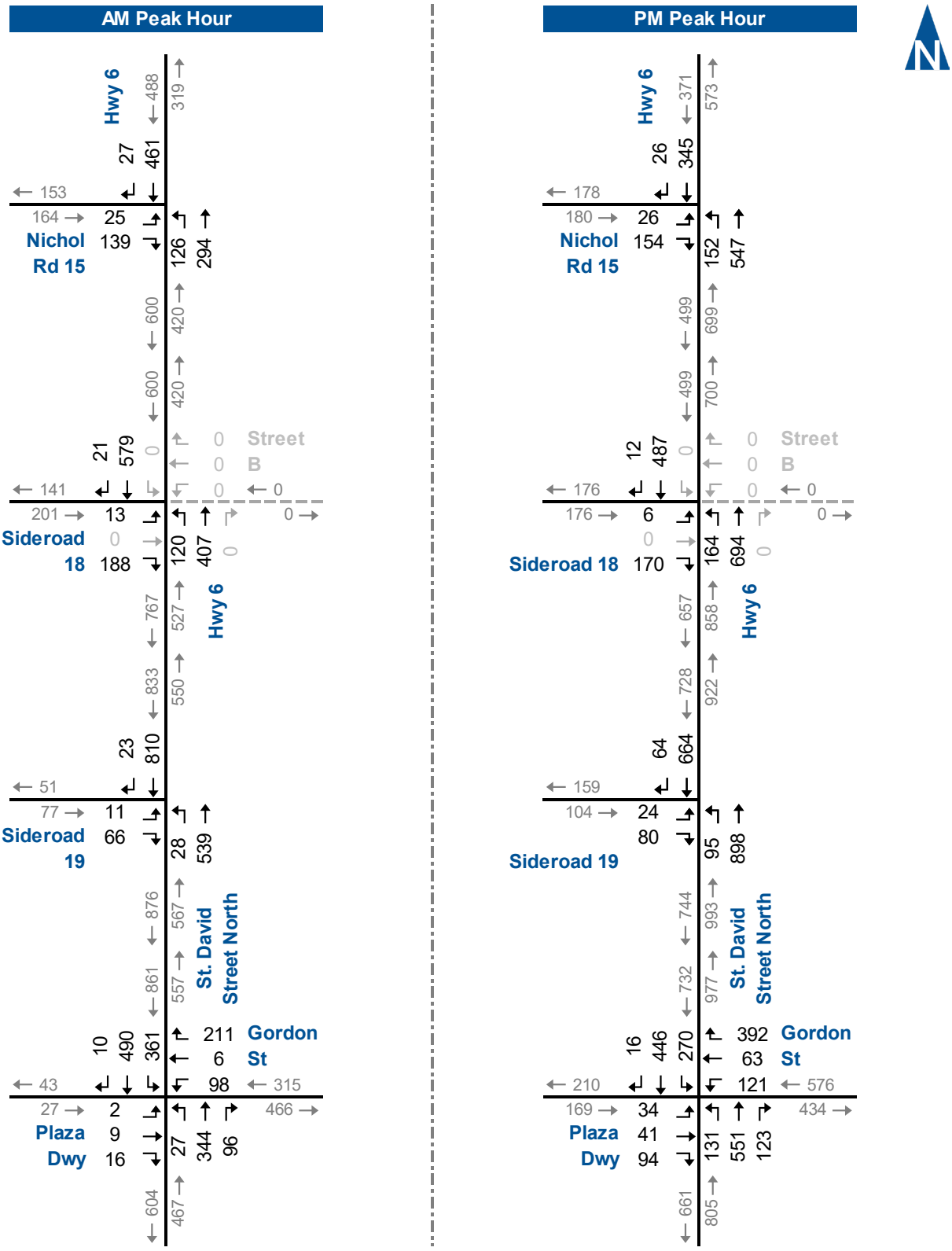
Figure 4.1



2035 Future Background Traffic Volumes

968 St. David Street, Fergus
230599

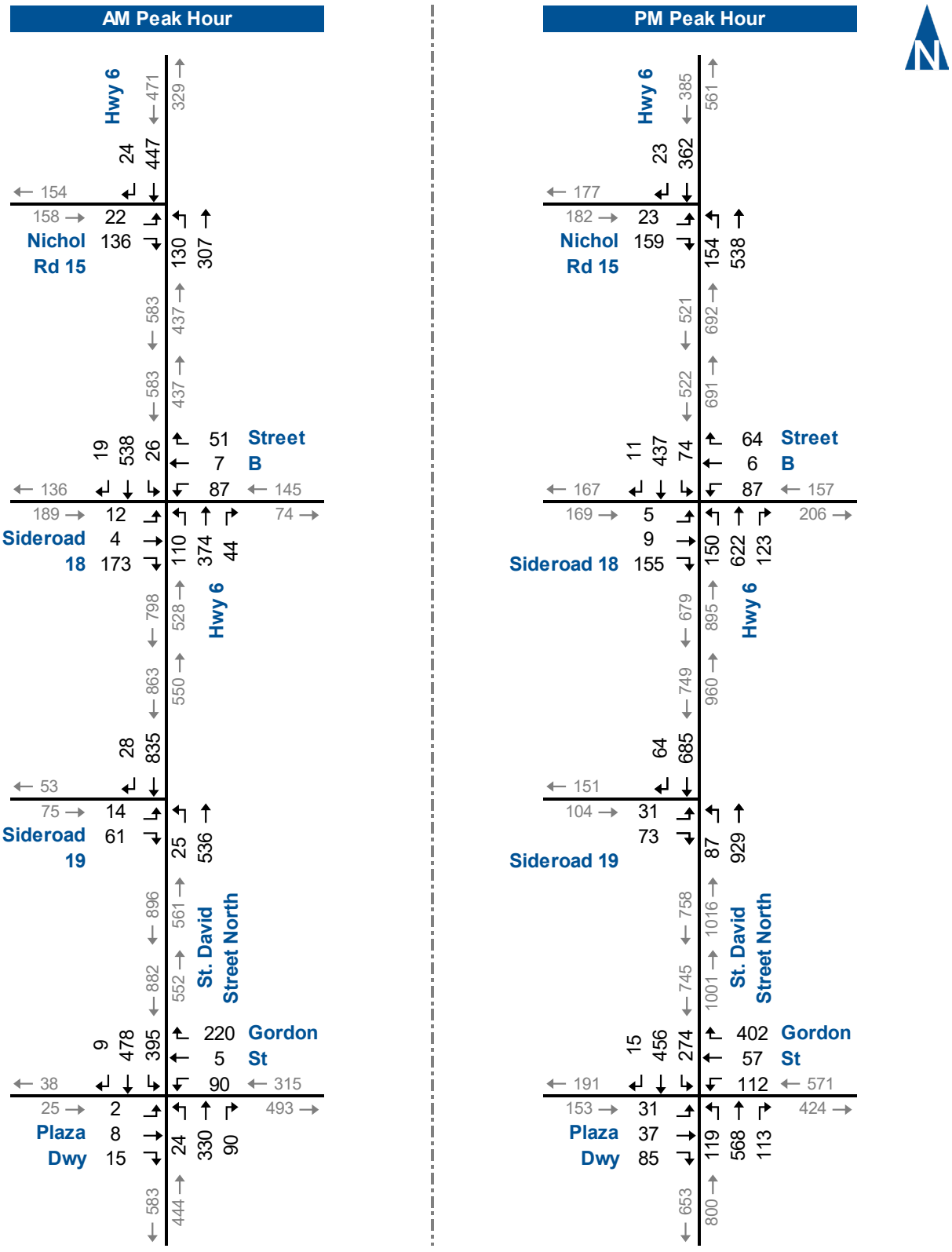
Figure 4.2



2040 Future Background Traffic Volumes

968 St. David Street, Fergus
230599

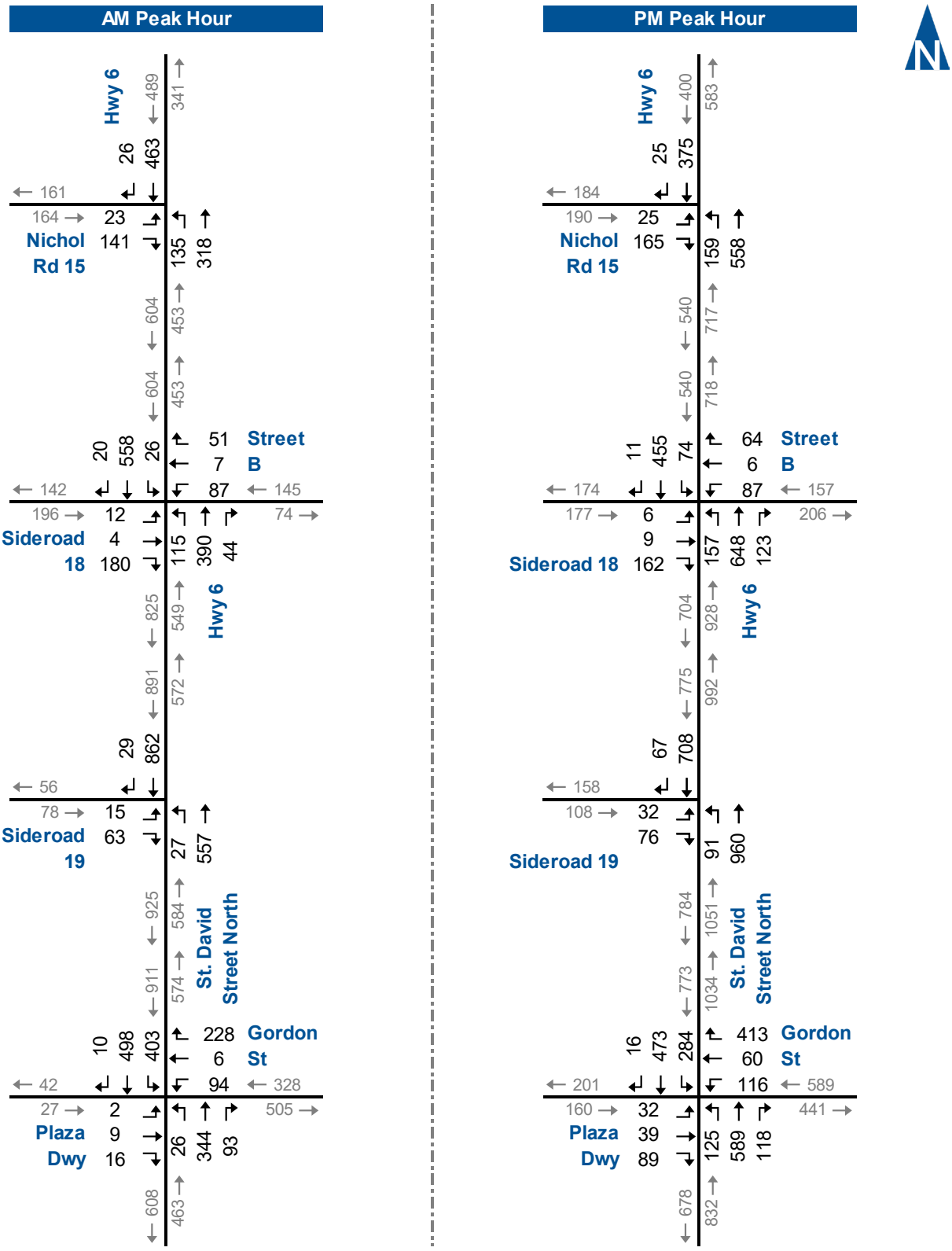
Figure 4.3



2030 Future Total Traffic Volumes

968 St. David Street, Fergus
230599

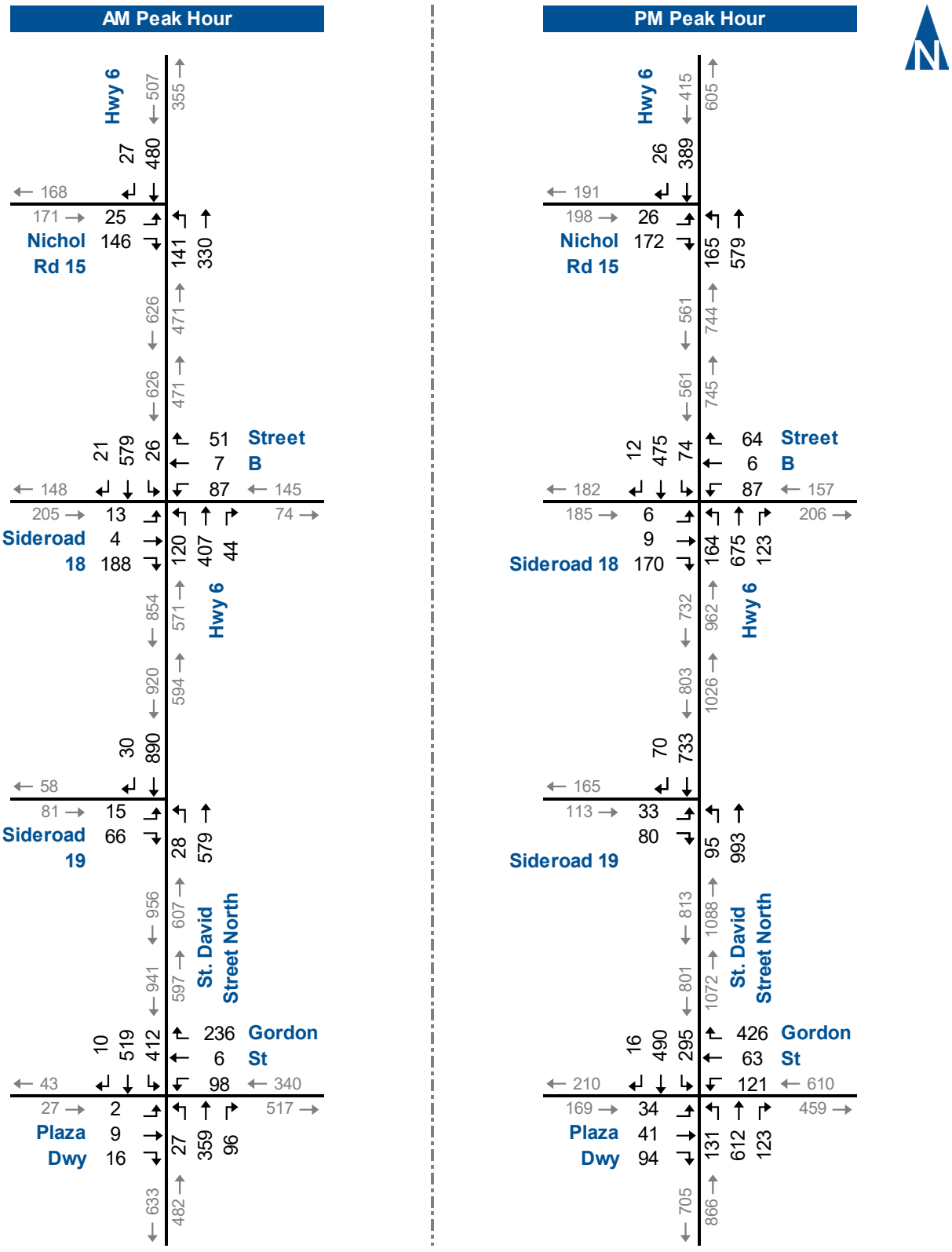
Figure 4.4



2035 Future Total Traffic Volumes

968 St. David Street, Fergus
230599

Figure 4.5



2040 Future Total Traffic Volumes

968 St. David Street, Fergus
230599

Figure 4.6

4.2 Background Traffic Operations

The operational analysis of background traffic conditions (without development) followed the same methodology and parameters used for existing traffic conditions.

4.2.1 Year 2030

Table 4.1 summarize the level of service conditions for the weekday AM and PM peak hours. The following critical movements are noted:

- Highway 6/St. David Street North and Sideroad 19:
  - Eastbound left/right-turn movement with LOS F and v/c ratio of 0.71 during the PM peak hour. The v/c ratio indicates that while there is delay, there remains excess capacity for this movement.
- St. David Street North and Gordon Street:
  - Southbound left-turn with queue reach greater than its available storage during the AM and PM peak hours.

The remaining study area intersections are reported to operate at acceptable levels of service and within capacity.

Appendix F1 contains the detailed Synchro reports.

TABLE 4.1: 2030 BACKGROUND OPERATIONS

Analysis Period	Intersection	Control Type	MOE	Direction / Movement / Approach																
				Eastbound				Westbound				Northbound				Southbound				Overall
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	Highway 6 & Nichol Road 15	TWSC	LOS	C		>	**C**					A	A	>	**A**		A	>	**A**	**A**
			Delay	16		>	**16**					9	0	>	**3**		0	>	**0**	**4**
			V/C	0.32		>						0.12	0.16	>			0.28	>		
			Q	12		>						3	0	>			0	>		
			Ex	-		>						115	-	>			-	>		
			Avail.	-		>						112	-	>			-	>		
	Highway 6 & Sideroad 18	TWSC	LOS	C		>	**C**					A	A		**A**		A	>	**A**	**A**
			Delay	20		>	**20**					9	0		**2**		0	>	**0**	**4**
			V/C	0.45		>						0.13	0.24				0.36	>		
			Q	18		>						4	0				0	>		
			Ex	-		>						110	-				-	>		
			Avail.	-		>						107	-				-	>		
	Highway 6/St. David Street & Sideroad 19	TWSC	LOS	C		>	**C**					B	A		**A**		A	>	**A**	**A**
			Delay	23		>	**23**					10	0		**1**		0	>	**0**	**1**
			V/C	0.27		>						0.04	0.32				0.50	>		
			Q	9		>						1	0				0	>		
			Ex	-		>						20	-				-	>		
			Avail.	-		>						19	-				-	>		
	St. David Street & Gordon Street	TCS	LOS	B	B	>	**B**	C	B	>	**B**	A	B	>	**B**	B	B	>	**B**	**B**
			Delay	18	18	>	**18**	20	19	>	**19**	8	17	>	**16**	19	16	>	**18**	**18**
			V/C	0.01	0.04	>		0.40	0.17	>		0.06	0.66	>		0.82	0.68	>		**0.73**
			Q	2	6	>		23	16	>		3	65	>		46	76	>		
			Ex	20	-	>		25	-	>		20	-	>		25	-	>		
			Avail.	18	-	>		2	-	>		17	-	>		-21	-	>		
PM Peak Hour	Highway 6 & Nichol Road 15	TWSC	LOS	C		>	**C**					A	A	>	**A**		A	>	**A**	**A**
			Delay	16		>	**16**					8	0	>	**2**		0	>	**0**	**3**
			V/C	0.35		>						0.13	0.31	>			0.21	>		
			Q	12		>						3	0	>			0	>		
			Ex	-		>						115	-	>			-	>		
			Avail.	-		>						112	-	>			-	>		
	Highway 6 & Sideroad 18	TWSC	LOS	C		>	**C**					A	A		**A**		A	>	**A**	**A**
			Delay	16		>	**16**					9	0		**2**		0	>	**0**	**3**
			V/C	0.34		>						0.15	0.41				0.29	>		
			Q	12		>						4	0				0	>		
			Ex	-		>						110	-				-	>		
			Avail.	-		>						106	-				-	>		
	Highway 6/St. David Street & Sideroad 19	TWSC	LOS	F		>	**F**					A	A		**A**		A	>	**A**	**A**
			Delay	76		>	**76**					10	0		**1**		0	>	**0**	**5**
			V/C	0.71		>						0.12	0.53				0.43	>		
			Q	33		>						3	0				0	>		
			Ex	-		>						20	-				-	>		
			Avail.	-		>						17	-				-	>		
	St. David Street & Gordon Street	TCS	LOS	C	C	>	**C**	C	C	>	**C**	A	C	>	**C**	C	B	>	**B**	**C**
			Delay	22	21	>	**21**	24	26	>	**25**	8	26	>	**23**	27	15	>	**19**	**22**
			V/C	0.28	0.18	>		0.51	0.60	>		0.26	0.85	>		0.84	0.57	>		**0.78**
			Q	11	16	>		28	43	>		14	151	>		47	79	>		
			Ex	20	-	>		25	-	>		20	-	>		25	-	>		
			Avail.	9	-	>		-3	-	>		6	-	>		-22	-	>		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds

Q - 95th Percentile Queue Length (m)
Ex. - Existing Available Storage (m)
Avail. - Available Storage (m)

TCS - Traffic Control Signal
TWSC - Two-Way Stop Control

< / > - Shared Turn Lane

4.2.2 Year 2035

Table 4.2 summarize the level of service conditions for the weekday AM and PM peak hours. The following critical movements are noted:

- Highway 6/St. David Street North and Sideroad 19:
  - Eastbound left/right-turn movement with LOS F and v/c ratio of 0.88 during the PM peak hour. The v/c ratio indicates that while there is delay, there remains excess capacity for this movement.
- St. David Street North and Gordon Street:
  - Southbound left-turn with queue reach greater than its available storage during the AM peak hour. LOS C, v/c ratio of 0.94, and queue reach greater than its available storage during the PM peak hour.

The remaining study area intersections are reported to operate at acceptable levels of service and within capacity.

Appendix F2 contains the detailed Synchro reports.

TABLE 4.2: 2035 BACKGROUND OPERATIONS

Analysis Period	Intersection	Control Type	MOE	Direction / Movement / Approach																	
				Eastbound				Westbound				Northbound				Southbound				Overall
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	Highway 6 & Nichol Road 15	TWSC	LOS	C		>	C					A	A	>	A		A	>	A	A
			Delay	17		>	17					9	0	>	3		0	>	0	4
			V/C	0.37		>						0.12	0.17	>			0.30	>		
			Q	13		>						3	0	>			0	>		
			Ex	-		>						115	-	>			-	>		
			Avail.	-		>						112	-	>			-	>		
	Highway 6 & Sideroad 18	TWSC	LOS	C		>	C					A	A		A		A	>	A	A
			Delay	21		>	21					10	0		2		0	>	0	4
			V/C	0.49		>						0.14	0.25				0.37	>		
			Q	21		>						4	0				0	>		
			Ex	-		>						110	-				-	>		
			Avail.	-		>						106	-				-	>		
	Highway 6/St. David Street & Sideroad 19	TWSC	LOS	C		>	C					B	A		A		A	>	A	A
			Delay	25		>	25					10	0		1		0	>	0	2
			V/C	0.31		>						0.04	0.33				0.51	>		
			Q	10		>						1	0				0	>		
			Ex	-		>						20	-				-	>		
			Avail.	-		>						19	-				-	>		
	St. David Street & Gordon Street	TCS	LOS	B	B	>	B	C	B	>	B	A	B	>	B	C	B	>	B	B
			Delay	18	18	>	18	21	19	>	19	8	17	>	17	24	17	>	20	19
			V/C	0.01	0.04	>		0.41	0.18	>		0.07	0.68	>		0.86	0.70	>		0.77
			Q	2	7	>		24	17	>		4	70	>		53	81	>		
			Ex	20	-	>		25	-	>		20	-	>		25	-	>		
			Avail.	18	-	>		1	-	>		16	-	>		-28	-	>		
PM Peak Hour	Highway 6 & Nichol Road 15	TWSC	LOS	C		>	C					A	A	>	A		A	>	A	A
			Delay	17		>	17					8	0	>	2		0	>	0	4
			V/C	0.38		>						0.13	0.32	>			0.22	>		
			Q	14		>						4	0	>			0	>		
			Ex	-		>						115	-	>			-	>		
			Avail.	-		>						111	-	>			-	>		
	Highway 6 & Sideroad 18	TWSC	LOS	C		>	C					A	A		A		A	>	A	A
			Delay	17		>	17					9	0		2		0	>	0	3
			V/C	0.38		>						0.16	0.43				0.31	>		
			Q	14		>						5	0				0	>		
			Ex	-		>						110	-				-	>		
			Avail.	-		>						105	-				-	>		
	Highway 6/St. David Street & Sideroad 19	TWSC	LOS	F		>	F					B	A		A		A	>	A	A
			Delay	117		>	117					10	0		1		0	>	0	7
			V/C	0.88		>						0.12	0.55				0.45	>		
			Q	44		>						3	0				0	>		
			Ex	-		>						20	-				-	>		
			Avail.	-		>						17	-				-	>		
	St. David Street & Gordon Street	TCS	LOS	C	C	>	C	C	C	>	C	A	C	>	C	D	B	>	C	C
			Delay	23	21	>	22	25	28	>	27	8	28	>	25	48	15	>	27	26
			V/C	0.29	0.19	>		0.52	0.66	>		0.28	0.88	>		0.94	0.59	>		0.87
			Q	11	17	>		29	49	>		15	161	>		65	84	>		
			Ex	20	-	>		25	-	>		20	-	>		25	-	>		
			Avail.	9	-	>		-4	-	>		5	-	>		-40	-	>		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
Q - 95th Percentile Queue Length (m)
Ex. - Existing Available Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal
TWSC - Two-Way Stop Control
< / > - Shared Turn Lane

4.2.3 Year 2040

Table 4.3 summarize the level of service conditions for the weekday AM and PM peak hours. The following critical movements are noted:

- Highway 6/St. David Street North and Sideroad 19:
  - Eastbound left/right-turn movement with LOS F and v/c ratio greater than 1.0 during the PM peak hour.
- St. David Street North and Gordon Street:
  - Southbound left-turn with LOS C, v/c ratio of 0.90, and queue reach greater than its available storage during the AM peak hour. LOS F, v/c ratio greater than 1.0, and queue reach greater than its available storage during the PM peak hour.

The remaining study area intersections are reported to operate at acceptable levels of service and within capacity.

Appendix F3 contains the detailed Synchro reports.

TABLE 4.3: 2040 BACKGROUND OPERATIONS

Analysis Period	Intersection	Control Type	MOE	Direction / Movement / Approach																	
				Eastbound				Westbound				Northbound				Southbound				Overall
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	Highway 6 & Nichol Road 15	TWSC	LOS	C		>	C					A	A	>	A		A	>	A	A
			Delay	18		>	18					9	0	>	3		0	>	0	4
			V/C	0.40		>						0.13	0.18	>			0.31	>		
			Q	15		>						4	0	>			0	>		
			Ex	-		>						115	-	>			-	>		
			Avail.	-		>						111	-	>			-	>		
	Highway 6 & Sideroad 18	TWSC	LOS	C		>	C					A	A		A		A	>	A	A
			Delay	23		>	23					10	0		2		0	>	0	4
			V/C	0.53		>						0.15	0.26				0.38	>		
			Q	24		>						4	0				0	>		
			Ex	-		>						110	-				-	>		
			Avail.	-		>						106	-				-	>		
	Highway 6/St. David Street & Sideroad 19	TWSC	LOS	D		>	D					B	A		A		A	>	A	A
			Delay	27		>	27					10	0		1		0	>	0	2
			V/C	0.34		>						0.04	0.34				0.53	>		
			Q	12		>						1	0				0	>		
			Ex	-		>						20	-				-	>		
			Avail.	-		>						19	-				-	>		
	St. David Street & Gordon Street	TCS	LOS	B	B	>	B	C	B	>	B	A	B	>	B	C	B	>	C	C
			Delay	18	19	>	19	21	19	>	20	8	18	>	17	31	17	>	23	21
			V/C	0.01	0.04	>		0.43	0.19	>		0.07	0.69	>		0.90	0.72	>		0.81
			Q	2	7	>		25	17	>		4	75	>		59	87	>		
			Ex	20	-	>		25	-	>		20	-	>		25	-	>		
			Avail.	18	-	>		0	-	>		16	-	>		-34	-	>		
PM Peak Hour	Highway 6 & Nichol Road 15	TWSC	LOS	C		>	C					A	A	>	A		A	>	A	A
			Delay	18		>	18					9	0	>	2		0	>	0	4
			V/C	0.42		>						0.14	0.34	>			0.22	>		
			Q	16		>						4	0	>			0	>		
			Ex	-		>						115	-	>			-	>		
			Avail.	-		>						111	-	>			-	>		
	Highway 6 & Sideroad 18	TWSC	LOS	C		>	C					A	A		A		A	>	A	A
			Delay	18		>	18					9	0		2		0	>	0	3
			V/C	0.42		>						0.17	0.44				0.32	>		
			Q	16		>						5	0				0	>		
			Ex	-		>						110	-				-	>		
			Avail.	-		>						105	-				-	>		
	Highway 6/St. David Street & Sideroad 19	TWSC	LOS	F		>	F					B	A		A		A	>	A	B
			Delay	205		>	205					10	0		1		0	>	0	12
			V/C	1.12		>						0.13	0.57				0.47	>		
			Q	59		>						4	0				0	>		
			Ex	-		>						20	-				-	>		
			Avail.	-		>						16	-				-	>		
	St. David Street & Gordon Street	TCS	LOS	C	C	>	C	C	C	>	C	A	C	>	C	F	B	>	D	C
			Delay	23	21	>	22	25	31	>	30	9	34	>	29	89	16	>	43	33
			V/C	0.32	0.19	>		0.53	0.72	>		0.31	0.92	>		1.07	0.62	>		0.98
			Q	12	18	>		30	57	>		15	171	>		76	88	>		
			Ex	20	-	>		25	-	>		20	-	>		25	-	>		
			Avail.	8	-	>		-5	-	>		5	-	>		-51	-	>		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds

Q - 95th Percentile Queue Length (m)
Ex. - Existing Available Storage (m)
Avail. - Available Storage (m)

TCS - Traffic Control Signal
TWSC - Two-Way Stop Control

< / > - Shared Turn Lane

4.3 Total Traffic Operations

The operational analysis of total traffic conditions (with development) followed the same methodology used for existing and background traffic conditions.

4.3.1 Year 2030 (Build-out)

Table 4.4 summarizes the level of service conditions for the weekday AM and PM peak hours. The following critical movements are noted:

- Highway 6 and Sideroad 18/Street B:
  - Westbound left/through/right-turn movement with LOS F and v/c ratio greater than 1.0 during the AM and PM peak hours.
- Highway 6/St. David Street North and Sideroad 19:
  - Eastbound left/right-turn movement with LOS F and v/c ratio greater than 1.0 during the PM peak hour.
- St. David Street North and Gordon Street:
  - Southbound left-turn with LOS D, v/c ratio of 0.95, and queue reach greater than its available storage during the AM peak hour. LOS F, v/c ratio greater than 1.0, and queue reach greater than its available storage during the PM peak hour.

Appendix G1 contains the detailed Synchro reports.

The new municipal connection to Highway 6 is forecast to operate with poor levels of service during the AM and PM peak hours. This is likely due to the high through volumes on Highway 6.

TABLE 4.4: 2030 TOTAL OPERATIONS

Analysis Period	Intersection	Control Type	MOE	Direction / Movement / Approach																
				Eastbound				Westbound				Northbound				Southbound				Overall
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	Highway 6 & Nichol Road 15	TWSC	LOS	C		>	C					A	A	>	A		A	>	A	A
			Delay	18		>	18					9	0	>	3		0	>	0	4
			V/C	0.38		>						0.13	0.20	>			0.30	>		
			Q	14		>						4	0	>			0	>		
			Ex	-		>						115	-	>			-	>		
			Avail.	-		>						111	-	>			-	>		
	Highway 6 & Sideroad 18/Street B	TWSC	LOS	<	C	>	C	<	F	>	F	A	A	>	A	<	A	>	A	F
			Delay	<	25	>	25	<	548	>	548	9	0	>	2	<	1	>	1	59
			V/C	<	0.54	>		<	1.94	>		0.13	0.27	>		<	0.03	>		
			Q	<	25	>		<	111	>		4	0	>		<	1	>		
			Ex	<	-	>		<	-	>		110	-	>		<	-	>		
			Avail.	<	-	>		<	-	>		106	-	>		<	-	>		
	Highway 6/St. David Street & Sideroad 19	TWSC	LOS	D		>	D					B	A		A		A	>	A	A
			Delay	30		>	30					11	0		1		0	>	0	2
			V/C	0.36		>						0.04	0.34				0.55	>		
			Q	13		>						1	0				0	>		
			Ex	-		>						20	-				-	>		
			Avail.	-		>						19	-				-	>		
	St. David Street & Gordon Street	TCS	LOS	B	B	>	B	C	B	>	B	A	B	>	B	D	B	>	C	C
			Delay	18	18	>	18	21	19	>	20	8	17	>	16	39	17	>	27	23
			V/C	0.01	0.04	>		0.40	0.19	>		0.06	0.67	>		0.95	0.70	>		0.84
			Q	2	6	>		23	17	>		3	69	>		67	82	>		
			Ex	20	-	>		25	-	>		20	-	>		25	-	>		
			Avail.	18	-	>		2	-	>		17	-	>		-42	-	>		
PM Peak Hour	Highway 6 & Nichol Road 15	TWSC	LOS	C		>	C					A	A	>	A		A	>	A	A
			Delay	19		>	19					9	0	>	2		0	>	0	4
			V/C	0.43		>						0.14	0.34	>			0.25	>		
			Q	17		>						4	0	>			0	>		
			Ex	-		>						115	-	>			-	>		
			Avail.	-		>						111	-	>			-	>		
	Highway 6 & Sideroad 18/Street B	TWSC	LOS	<	D	>	D	<	F	>	F	A	A	>	A	<	A	>	A	F
			Delay	<	29	>	29	<	Err	>	Err	9	0	>	2	<	3	>	3	912
			V/C	<	0.56	>		<	3.69	>		0.15	0.48	>		<	0.10	>		
			Q	<	26	>		<	Err	>		4	0	>		<	3	>		
			Ex	<	-	>		<	-	>		110	-	>		<	-	>		
			Avail.	<	-	>		<	-	>		106	-	>		<	-	>		
	Highway 6/St. David Street & Sideroad 19	TWSC	LOS	F		>	F					B	A		A		A	>	A	C
			Delay	396		>	396					10	0		1		0	>	0	23
			V/C	1.54		>						0.12	0.59				0.48	>		
			Q	76		>						3	0				0	>		
			Ex	-		>						20	-				-	>		
			Avail.	-		>						17	-				-	>		
	St. David Street & Gordon Street	TCS	LOS	C	C	>	C	C	C	>	C	A	D	>	C	F	B	>	D	D
			Delay	22	21	>	22	24	32	>	31	9	35	>	31	96	16	>	46	35
			V/C	0.29	0.17	>		0.48	0.74	>		0.29	0.93	>		1.10	0.63	>		1.00
			Q	11	16	>		28	64	>		14	173	>		78	91	>		
			Ex	20	-	>		25	-	>		20	-	>		25	-	>		
			Avail.	9	-	>		-3	-	>		6	-	>		-53	-	>		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds

Q - 95th Percentile Queue Length (m)
Ex. - Existing Available Storage (m)
Avail. - Available Storage (m)

TCS - Traffic Control Signal
TWSC - Two-Way Stop Control

< / > - Shared Turn Lane

4.3.2 Year 2035 (Five-Year Horizon)

Table 4.5 summarize the level of service conditions for the weekday AM and PM peak hours. The following critical movements are noted:

- Highway 6 and Sideroad 18/Street B:
  - Eastbound left/through/right-turn movement with LOS E and v/c ratio of 0.66 during PM peak hour; and
  - Westbound left/through/right-turn movement with LOS F and v/c ratio greater than 1.0 during the AM and PM peak hours.
- Highway 6/St. David Street North and Sideroad 19:
  - Eastbound left/right-turn movement with LOS F and v/c ratio greater than 1.0 during the PM peak hour.
- St. David Street North and Gordon Street:
  - Northbound through/right-turn movement with LOS D and v/c ratio of 0.98 during the PM peak hour; and
  - Southbound left-turn with LOS D, v/c ratio of 0.99, and queue reach greater than its available storage during the AM peak hour. LOS F, v/c ratio greater than 1.0, and queue reach greater than its available storage during the PM peak hour.

Appendix G2 contains the detailed Synchro reports.

The new municipal connection to Highway 6 is forecast to operate with poor levels of service during the AM and PM peak hours. This is likely due to the high through volumes on Highway 6.

TABLE 4.5: 2035 TOTAL OPERATIONS

Analysis Period	Intersection	Control Type	MOE	Direction / Movement / Approach																
				Eastbound				Westbound				Northbound				Southbound				Overall
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	Highway 6 & Nichol Road 15	TWSC	LOS	C		>	C					A	A	>	A		A	>	A	A
			Delay	19		>	19					9	0	>	3		0	>	0	4
			V/C	0.41		>						0.14	0.20	>			0.31	>		
			Q	16		>						4	0	>			0	>		
			Ex	-		>						115	-	>			-	>		
			Avail.	-		>						111	-	>			-	>		
	Highway 6 & Sideroad 18/Street B	TWSC	LOS	<	D	>	D	<	F	>	F	A	A	>	A	<	A	>	A	F
			Delay	<	28	>	28	<	688	>	688	10	0	>	2	<	1	>	1	72
			V/C	<	0.58	>		<	2.23	>		0.14	0.28	>		<	0.03	>		
			Q	<	28	>		<	119	>		4	0	>		<	1	>		
			Ex	<	-	>		<	-	>		110	-	>		<	-	>		
			Avail.	<	-	>		<	-	>		106	-	>		<	-	>		
	Highway 6/St. David Street & Sideroad 19	TWSC	LOS	D		>	D					B	A		A		A	>	A	A
			Delay	34		>	34					11	0		1		0	>	0	2
			V/C	0.41		>						0.04	0.36				0.57	>		
			Q	15		>						1	0				0	>		
			Ex	-		>						20	-				-	>		
			Avail.	-		>						19	-				-	>		
	St. David Street & Gordon Street	TCS	LOS	B	B	>	B	C	B	>	B	A	B	>	B	D	B	>	C	C
			Delay	19	19	>	19	21	20	>	20	8	17	>	17	52	17	>	32	26
			V/C	0.01	0.04	>		0.42	0.20	>		0.07	0.68	>		0.99	0.72	>		0.88
			Q	2	7	>		24	18	>		4	73	>		74	88	>		
			Ex	20	-	>		25	-	>		20	-	>		25	-	>		
			Avail.	18	-	>		1	-	>		16	-	>		-49	-	>		
PM Peak Hour	Highway 6 & Nichol Road 15	TWSC	LOS	C		>	C					A	A	>	A		A	>	A	A
			Delay	21		>	21					9	0	>	2		0	>	0	4
			V/C	0.48		>						0.15	0.36	>			0.26	>		
			Q	20		>						4	0	>			0	>		
			Ex	-		>						115	-	>			-	>		
			Avail.	-		>						111	-	>			-	>		
	Highway 6 & Sideroad 18/Street B	TWSC	LOS	<	E	>	E	<	F	>	F	A	A	>	A	<	A	>	A	F
			Delay	<	39	>	39	<	Err	>	Err	9	0	>	2	<	3	>	3	882
			V/C	<	0.66	>		<	4.36	>		0.16	0.49	>		<	0.10	>		
			Q	<	35	>		<	Err	>		5	0	>		<	3	>		
			Ex	<	-	>		<	-	>		110	-	>		<	-	>		
			Avail.	<	-	>		<	-	>		105	-	>		<	-	>		
	Highway 6/St. David Street & Sideroad 19	TWSC	LOS	F		>	F					B	A		A		A	>	A	D
			Delay	605		>	605					11	0		1		0	>	0	34
			V/C	1.98		>						0.13	0.61				0.50	>		
			Q	90		>						4	0				0	>		
			Ex	-		>						20	-				-	>		
			Avail.	-		>						16	-				-	>		
	St. David Street & Gordon Street	TCS	LOS	C	C	>	C	C	C	>	C	A	D	>	D	F	B	>	D	D
			Delay	23	21	>	21	24	35	>	33	9	45	>	39	115	17	>	54	41
			V/C	0.30	0.17	>		0.48	0.78	>		0.32	0.98	>		1.15	0.66	>		1.04
			Q	12	17	>		29	76	>		15	182	>		82	95	>		
			Ex	20	-	>		25	-	>		20	-	>		25	-	>		
			Avail.	8	-	>		-4	-	>		5	-	>		-57	-	>		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds

Q - 95th Percentile Queue Length (m)
Ex. - Existing Available Storage (m)
Avail. - Available Storage (m)

TCS - Traffic Control Signal
TWSC - Two-Way Stop Control

< / > - Shared Turn Lane

4.3.3 Year 2040 (Ten-Year Horizon)

Table 4.6 summarize the level of service conditions for the weekday AM and PM peak hours. The following critical movements are noted:

- Highway 6 and Sideroad 18/Street B:
  - Eastbound left/through/right-turn movement LOS E and v/c ratio of 0.71 during PM peak hour; and
  - Westbound left/through/right-turn movement with LOS F and v/c ratio greater than 1.0 during the AM and PM peak hours.
- Highway 6/St. David Street North and Sideroad 19:
  - Eastbound left/right-turn movement with LOS E and v/c ratio of 0.45 during the AM peak hour. LOS F and v/c ratio greater than 1.0 during the PM peak hour.
- St. David Street North and Gordon Street:
  - Northbound through/right-turn movement with LOS E and v/c ratio greater than 1.0 during the PM peak hour; and
  - Southbound left-turn with LOS E/F, v/c ratio greater than 1.0, and queue reach greater than its available storage during the AM and PM peak hours.

Appendix G3 contains the detailed Synchro reports.

The new municipal connection to Highway 6 is forecast to operate with poor levels of service during the AM and PM peak hours. This is likely due to the high through volumes on Highway 6.

TABLE 4.6: 2040 TOTAL OPERATIONS

Analysis Period	Intersection	Control Type	MOE	Direction / Movement / Approach																	
				Eastbound				Westbound				Northbound				Southbound				Overall
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	Highway 6 & Nichol Road 15	TWSC	LOS	C		>	C					A	A	>	A		A	>	A	A
			Delay	21		>	21					9	0	>	3		0	>	0	4
			V/C	0.50		>						0.15	0.21	>			0.32	>		
			Q	18		>						4	0	>			0	>		
			Ex	-		>						115	-	>			-	>		
			Avail.	-		>						111	-	>			-	>		
	Highway 6 & Sideroad 18/Street B	TWSC	LOS	<	D	>	D	<	F	>	F	A	A	>	A	<	A	>	A	F
			Delay	<	32	>	32	<	859	>	859	10	0	>	2	<	1	>	1	86
			V/C	<	0.64	>		<	2.58	>		0.15	0.29	>		<	0.03	>		
			Q	<	34	>		<	127	>		4	0	>		<	1	>		
			Ex	<	-	>		<	-	>		110	-	>		<	-	>		
			Avail.	<	-	>		<	-	>		106	-	>		<	-	>		
	Highway 6/St. David Street & Sideroad 19	TWSC	LOS	E		>	E					B	A		A		A	>	A	A
			Delay	38		>	38					11	0		1		0	>	0	2
			V/C	0.45		>						0.05	0.37				0.59	>		
			Q	17		>						1	0				0	>		
			Ex	-		>						20	-				-	>		
			Avail.	-		>						19	-				-	>		
	St. David Street & Gordon Street	TCS	LOS	B	B	>	B	C	B	>	C	A	B	>	B	E	B	>	D	C
			Delay	19	19	>	19	22	20	>	20	8	18	>	17	68	18	>	40	30
			V/C	0.01	0.04	>		0.44	0.21	>		0.08	0.70	>		1.05	0.74	>		0.92
			Q	2	7	>		25	18	>		4	78	>		81	94	>		
			Ex	20	-	>		25	-	>		20	-	>		25	-	>		
			Avail.	18	-	>		0	-	>		16	-	>		-56	-	>		
PM Peak Hour	Highway 6 & Nichol Road 15	TWSC	LOS	C		>	C					A	A	>	A		A	>	A	A
			Delay	23		>	23					9	0	>	2		0	>	0	4
			V/C	0.52		>						0.16	0.37	>			0.27	>		
			Q	23		>						5	0	>			0	>		
			Ex	-		>						115	-	>			-	>		
			Avail.	-		>						111	-	>			-	>		
	Highway 6 & Sideroad 18/Street B	TWSC	LOS	<	E	>	E	<	F	>	F	A	A	>	A	<	A	>	A	F
			Delay	<	44	>	44	<	Err	>	Err	9	0	>	2	<	3	>	3	862
			V/C	<	0.71	>		<	4.97	>		0.17	0.51	>		<	0.10	>		
			Q	<	40	>		<	Err	>		5	0	>		<	3	>		
			Ex	<	-	>		<	-	>		110	-	>		<	-	>		
			Avail.	<	-	>		<	-	>		105	-	>		<	-	>		
	Highway 6/St. David Street & Sideroad 19	TWSC	LOS	F		>	F					B	A		A		A	>	A	E
			Delay	832		>	832					11	0		1		0	>	0	48
			V/C	2.45		>						0.14	0.63				0.51	>		
			Q	102		>						4	0				0	>		
			Ex	-		>						20	-				-	>		
			Avail.	-		>						16	-				-	>		
	St. David Street & Gordon Street	TCS	LOS	C	C	>	C	C	D	>	C	A	E	>	D	F	B	>	E	D
			Delay	23	21	>	21	23	37	>	34	10	61	>	53	138	19	>	63	49
			V/C	0.32	0.18	>		0.48	0.82	>		0.36	1.03	>		1.21	0.70	>		1.09
			Q	12	18	>		30	84	>		15	192	>		86	102	>		
			Ex	20	-	>		25	-	>		20	-	>		25	-	>		
			Avail.	8	-	>		-5	-	>		5	-	>		-61	-	>		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds

Q - 95th Percentile Queue Length (m)
Ex. - Existing Available Storage (m)
Avail. - Available Storage (m)

TCS - Traffic Control Signal
TWSC - Two-Way Stop Control

< / > - Shared Turn Lane

5 Remedial Measures

5.1 Traffic Signal Control

The future traffic analysis indicates that traffic control improvements may be required to accommodate forecast traffic volumes at the unsignalized intersections along Highway 6/St. David Street North.

The intersection was assessed using the Ontario Traffic Manual (OTM Book 12 signal warrant procedures[10] for Justification 7 (forecast volumes). **Appendix H** contains the warrant analysis. For forecast traffic, the signal warrant threshold is increased to 120% to be considered met.

Table 5.1 summarizes the traffic control signal warrants, and it indicates that traffic control signals are not warranted at the study area intersections.

The intersection of Highway 6 and Sideroad 18 / Street B is forecast to operate very poorly for the sidestreet movements, particularly the movements exiting the subject development. The signal warrant calculations show that while the signal warrants are not met at the 120% threshold, they do exceed 100%. Therefore, if the forecasts hold to be accurate, a traffic control signal could become warranted by the future horizons, after the development is built. Therefore, with the high delays and the volumes approaching the warrant threshold, it is recommended that this intersection be regularly monitored as construction of the subject development proceeds and that signalization of this intersection be considered to be installed upon opening of the subject development.

[10] Ontario Ministry of Transportation, *Ontario Traffic Manual Book 12: Traffic Signals*, (Toronto: Queen's Printer for Ontario, 2012.

TABLE 5.1: TRAFFIC CONTROL SIGNAL WARRANT SUMMARY

Intersection	Horizon	OTM Warrant Sumamry				Warranted	
		1A	1B	2A	2B	120%	150%
Highway 6 & Nichol Road 15	Background 2030	108%	44%	92%	23%	No	No
	Background 2035	113%	46%	96%	24%	No	No
	Background 2040	118%	48%	100%	26%	No	No
	Total 2030	121%	47%	103%	23%	No	No
	Total 2035	126%	49%	107%	24%	No	No
	Total 2040	131%	51%	111%	26%	No	No
Highway 6 & Sideroad 18/Street B	Background 2030	92%	34%	80%	6%	No	No
	Background 2035	95%	35%	83%	6%	No	No
	Background 2040	99%	37%	86%	6%	No	No
	Total 2030	111%	97%	88%	75%	No	No
	Total 2035	114%	99%	91%	75%	No	No
	Total 2040	118%	102%	94%	75%	No	No
Highway 6 & Sideroad 19	Background 2030	106%	16%	100%	17%	No	No
	Background 2035	110%	17%	104%	18%	No	No
	Background 2040	115%	18%	108%	18%	No	No
	Total 2030	117%	18%	111%	22%	No	No
	Total 2035	121%	18%	115%	22%	No	No
	Total 2040	125%	19%	119%	23%	No	No

5.2 Left-Turn Lanes

The Ministry of Transportation's (MTO) *Design Supplement*[11] for the *TAC Geometric Design Guide for Canadian Roads*[12] provides guidance on the assessment and/or need for auxiliary left-turn lanes.

The warrants have been completed for the Highway 6 at Street B and Highway 6 at Street F intersections for the AM and PM peak hour for the future total horizon years using the two-lane highways unsignalized nomographs. **Appendix H** contains the left-turn warrant nomographs.

The percentages of left-turning vehicles in the approaching volume were rounded to the nearest 5%, as nomographs are only provided for 5% increments. This apparent requirement is due to the nature of the warrant procedure that assumes a minimum of 5% of left turning vehicles in the advancing volume. Therefore, left-turn lanes are automatically not warranted for any left turning volume less than 5%.

[11] MTO. *Design Supplement for the TAC Geometric Design Guide for Canadian Roads: Appendix 9A for Section 9.17 (Left-Turn Lanes).* October 2023.

[12] Transportation Association of Canada (TAC). *Geometric Design Guide for Canadian Roads*. Ottawa, ON. June 2017.

Table 5.2 summarizes the left-turn lane warrant for the intersection of Highway 6 and Street B. It indicates that a southbound left-turn lane with a minimum of 50 metres of storage would be warranted under all horizon years. If this intersection becomes signalized, the calculation for left-turn lane storage would be based on the MTO arrival rates method instead. **Table 5.3** summarizes the left-turn lane storage requirements based on the vehicle arrival rates and green plus amber times for urban/commuter intersections as noted in Table B7-5 of the manual. It indicates that with traffic signals, the southbound left-turn lane would require a minimum of 30 metres of storage for all horizon years. The existing northbound left-turn lane would be able to accommodate the future traffic demand in all horizon years.

TABLE 5.2: LEFT-TURN LANE WARRANT SUMMARY – STREET B

Roadway	Highway 6					
Intersection	Street B					
Approach Direction	Southbound					
Design Speed	70 km/h					
Horizon	Total - 2030		Total - 2035		Total - 2040	
Peak Hour	AM	PM	AM	PM	AM	PM
Advancing Volume	583	522	604	540	626	561
Opposing Volumes	528	895	549	925	571	962
Left Turning Traffic	26	74	26	74	26	74
% of Left Turning Traffic	4%	14%	4%	14%	4%	13%
Figure Used*	9A-11	9A-12	9A-11	9A-12	9A-11	9A-12
Warranted	Yes	Yes	Yes	Yes	Yes	Yes
Storage Length Required	15m	40m	15m	50m	15m	50m

Based on MTO Design Supplement, October 2023 for TAC Geometric Design Guide for Canadian Roads - Oct. 2023

TABLE 5.3: LEFT-TURN ANALYSIS – SIGNALIZED INTERSECTION

Highway 6 at Sideroad 18/Street B				
Approach Direction	Northbound		Southbound	
Peak Hour	AM	PM	AM	PM
Current Left Turn Storage (m)	110	110	-	-
Proposed Cycle Length (sec)	80	80	80	80
2030 Total Projected Left-Turn Volume	110	150	26	74
Vehicles per cycle	2.8	3.8	0.7	1.9
Number of Vehicles (From Table B7-5)	5	7	2	4
Projected Storage	**38**	**53**	**15**	**30**
2035 Total Projected Left-Turn Volume	115	157	26	74
Vehicles per cycle	2.9	3.9	0.7	1.9
Number of Vehicles (From Table B7-5)	6	7	2	4
Projected Storage	**45**	**53**	**15**	**30**
2040 Total Projected Left-Turn Volume	120	164	26	74
Vehicles per cycle	3.0	4.1	0.7	1.9
Number of Vehicles (From Table B7-5)	6	8	2	4
Projected Storage	**45**	**60**	**15**	**30**

Based on MTO Geometric Design Standards For Ontario Highw ays - 1985, Table B7-5L Vehicle Arrival Rates and Green Plus Amber Times for Urban/Commuter Intersections

5.3 Highway 6/St. David Street Corridor

The future traffic forecast shows high volumes of traffic on Highway 6/St. David Street during the AM and PM peak hours. This is confirmed in the analyses with the poor operations of the side street approaches and the forecast queue reach from the St. David Street and Gordon Street intersection.

To mitigate, the widening of Highway 6/St. David Street to include a second northbound and southbound through lane would be required.

Alternatively, a by-pass around the community of Fergus would remove the through traffic on St. David Street. The Township of Centre Wellington have recently requested to the Ministry of Transportation to start discussions on a by-pass as well as extending the connecting link locations further north and south on Highway 6.

5.4 Operational Analysis with Improvements

Synchro analysis was conducted for the 2040 horizon year total traffic conditions with no adjustments to traffic volumes and the following improvements:

- Highway 6/St. David Street Corridor:
  - Second northbound through lane; and
  - Second southbound through lane.
- Highway 6 and Sideroad 18/Street B:
  - Unwarranted traffic control signals;
  - Southbound left-turn lane with minimum of 55 metres of storage;
  - Eastbound left-turn lane; and
  - Westbound left-turn lane.

Table 5.4 summarizes the level of service conditions for the year 2040 total traffic conditions with the remedial measures outlined above. With the implementation of the noted remedial measures, intersection operations are forecast to operate with acceptable level of service.

Appendix I contains the detailed Synchro reports.

TABLE 5.4: 2040 TOTAL OPERATIONS WITH IMPROVEMENTS

Analysis Period	Intersection	Control Type	MOE	Direction / Movement / Approach																
				Eastbound				Westbound				Northbound				Southbound				Overall
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	Highway 6 & Nichol Road 15	TWSC	LOS	C		>	C					A	A	>	A		A	>	A	A
			Delay	21		>	21					9	0	>	3		0	>	0	4
			V/C	0.45		>						0.15	0.21	>			0.32	>		
			Q	18		>						4	0	>			0	>		
			Ex	-		>						115	-	>			-	>		
			Avail.	-		>						111	-	>			-	>		
	Highway 6 & Sideroad 18/Street B	TCS	LOS	C	C	>	C	C	C	>	C	B	B	>	B	B	B	>	B	B
			Delay	21	22	>	22	28	23	>	26	18	14	>	15	12	15	>	15	17
			V/C	0.04	0.14	>		0.56	0.07	>		0.56	0.39	>		0.08	0.50	>		0.45
			Q	6	18	>		25	10	>		39	39	>		8	53	>		
			Ex	25	-	>		25	-	>		110	-	>		50	-	>		
			Avail.	19	-	>		0	-	>		72	-	>		42	-	>		
	Highway 6/St. David Street & Sideroad 19	TWSC	LOS	C		>	C					B	A		A		A	>	A	A
			Delay	15		>	15					11	0		1		0	>	0	1
			V/C	0.20		>						0.05	0.18				0.38	>		
			Q	6		>						1	0				0	>		
			Ex	-		>						20	-				-	>		
			Avail.	-		>						19	-				-	>		
	St. David Street & Gordon Street	TCS	LOS	B	B	>	B	C	B	>	C	B	B	>	B	B	B	>	B	B
			Delay	19	19	>	19	21	20	>	20	12	17	>	17	12	10	>	11	14
			V/C	0.01	0.04	>		0.43	0.21	>		0.09	0.50	>		0.76	0.36	>		0.73
			Q	2	7	>		27	19	>		4	39	>		44	34	>		
			Ex	20	-	>		25	-	>		20	-	>		25	-	>		
			Avail.	18	-	>		-2	-	>		16	-	>		-19	-	>		
PM Peak Hour	Highway 6 & Nichol Road 15	TWSC	LOS	C		>	C					A	A	>	A		A	>	A	A
			Delay	23		>	23					9	0	>	2		0	>	0	4
			V/C	0.52		>						0.16	0.37	>			0.27	>		
			Q	23		>						5	0	>			0	>		
			Ex	-		>						115	-	>			-	>		
			Avail.	-		>						111	-	>			-	>		
	Highway 6 & Sideroad 18/Street B	TCS	LOS	B	B	>	B	B	B	>	B	A	A	>	A	A	A	>	A	A
			Delay	15	15	>	15	17	15	>	16	7	6	>	6	6	6	>	6	8
			V/C	0.03	0.15	>		0.42	0.07	>		0.38	0.45	>		0.25	0.28	>		0.44
			Q	3	13	>		18	8	>		23	38	>		12	22	>		
			Ex	25	-	>		25	-	>		110	-	>		50	-	>		
			Avail.	22	-	>		7	-	>		87	-	>		38	-	>		
	Highway 6/St. David Street & Sideroad 19	TWSC	LOS	C		>	C					B	A		A		A	>	A	A
			Delay	16		>	16					11	0		1		0	>	0	1
			V/C	0.27		>						0.15	0.32				0.31	>		
			Q	9		>						4	0				0	>		
			Ex	-		>						20	-				-	>		
			Avail.	-		>						16	-				-	>		
	St. David Street & Gordon Street	TCS	LOS	C	C	>	C	C	C	>	C	B	B	>	B	B	B	>	B	C
			Delay	23	20	>	21	23	32	>	30	11	20	>	18	15	14	>	14	20
			V/C	0.32	0.17	>		0.46	0.76	>		0.31	0.64	>		0.74	0.38	>		0.79
			Q	14	19	>		33	86	>		17	72	>		51	42	>		
			Ex	20	-	>		25	-	>		20	-	>		25	-	>		
			Avail.	6	-	>		-8	-	>		4	-	>		-26	-	>		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds

Q - 95th Percentile Queue Length (m)
Ex. - Existing Available Storage (m)
Avail. - Available Storage (m)

TCS - Traffic Control Signal
TWSC - Two-Way Stop Control

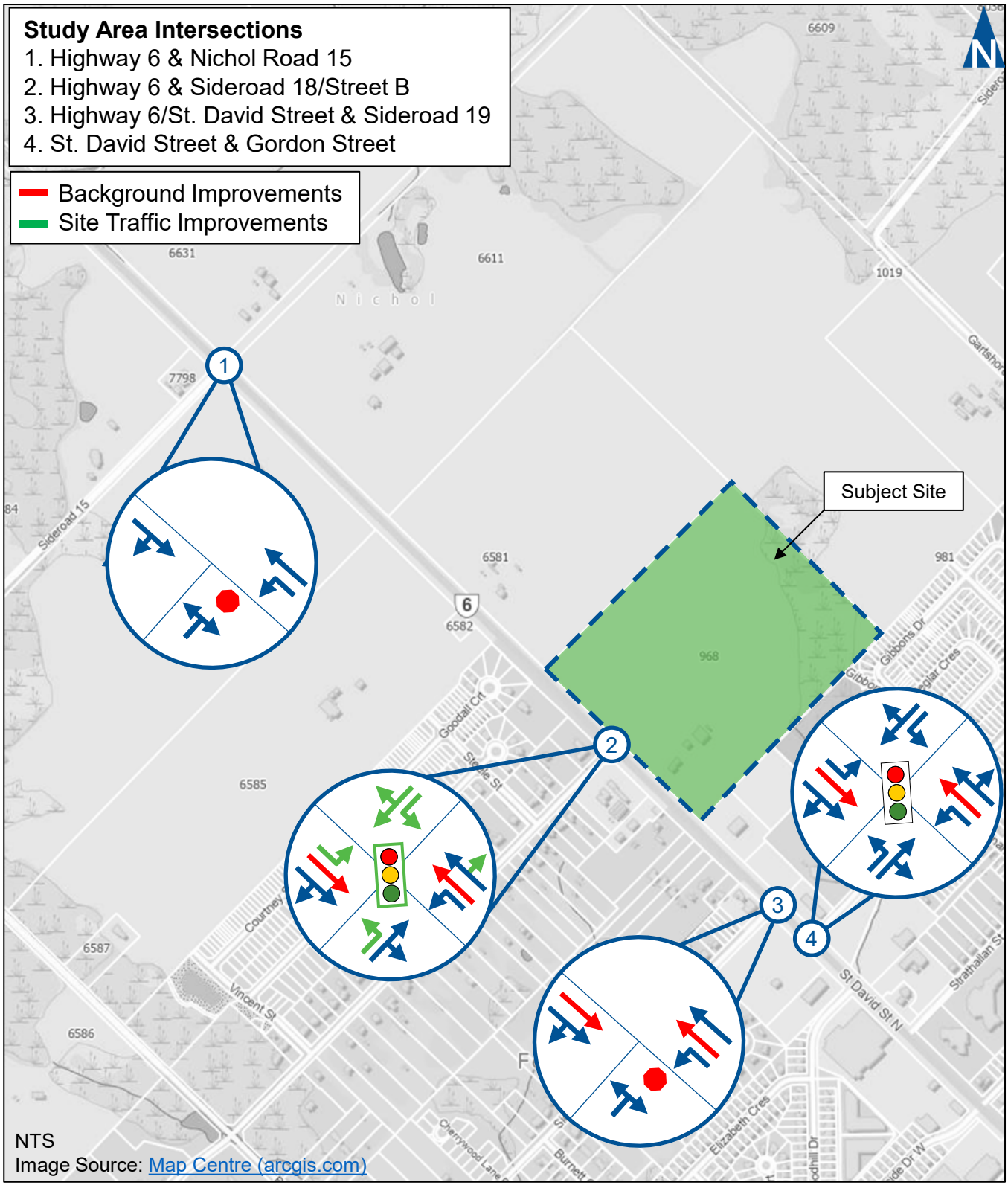
< / > - Shared Turn Lane

5.5 Summary

Delay and capacity deficiencies are forecast to occur at the study area intersections in the future with the anticipated background growth in traffic. With the addition of the site generated traffic, it is expected to exacerbate the delay and capacity deficiencies. Remedial measures to address the study area intersection operations include:

- Highway 6/St. David Street Corridor:
  - Second northbound through lane; and
  - Second southbound through lane.
- Highway 6 and Sideroad 18/Street B:
  - Unwarranted traffic control signals;
  - Southbound left-turn lane with minimum of 55 metres of storage;
  - Eastbound left-turn lane; and
  - Westbound left-turn lane.

Figure 5.1 illustrates the future lane configuration and traffic control of the study area intersections.



paradigm TRANSPORTATION SOLUTIONS LIMITED

Future Lane Configurations & Traffic Control

968 St. David Street, Fergus
230599

Figure 5.1

6 Conclusions and Recommendations

6.1 Conclusions

Based on the investigations carried out, it is concluded that:

- **Existing Traffic Conditions:** The study area intersections are currently operating at acceptable levels of service and within capacity
- **Development Trip Generation:** The overall development at full build-out is forecast to generate 219 new trips in the AM peak hour and 301 new trips in the PM peak hour.
- **Background Traffic Operations:** As the traffic volumes increase at the study area intersections, capacity issues are identified at the following intersections:
  - Highway 6/St. David Street and Sideroad 19; and
  - St. David Street and Gordon Street.
- **Total Traffic Operations:** The capacity deficiencies identified under background conditions would be further exacerbated with the addition of site generated traffic. Site generated traffic results in capacity deficiencies at the following intersections:
  - Highway 6 and Sideroad 18/Street B;
  - Highway 6/St. David Street and Sideroad 19; and
  - St. David Street and Gordon Street.
- Traffic control signals are not warranted for the unsignalized study area intersections.
- A southbound left-turn lane on Highway 6 at Street B is warranted with a minimum of 50 metres of storage.

6.2 Recommendations

Based on the findings of this study, it is recommended that the development be approved with the following improvements to the road network:

- Highway 6 and Sideroad 18/Street B:
  - Unwarranted traffic control signals;
  - Southbound left-turn lane with minimum of 50 metres of storage;
  - Eastbound left-turn lane; and
  - Westbound left-turn lane.

It is further recommended that the Township of Centre Wellington and the Ministry of Transportation come to an agreement on either extending the connecting link, widening Highway 6/St. David Street in the study are, or the provision of Highway 6 by-pass of Fergus to reduce the through volumes in the community.

Appendix A

Pre-Study Consultation

From: Hodgins, Allan (MTO)
To: Matt Brouwer
Cc: Andrew Evans; CBaker@centrewellington.ca; cpellizzari
Subject: RE: (230599 968 St David St, Fergus) TIS Scope
Date: June 20, 2024 10:11:32 PM
Attachments: image002.png
image003.png
Traffic Impact Studies Guideline - 2023.pdf
CP1012_2024.01.04 - Concept D.pdf

Hello Matt,

General Note:

- Should the northerly access location be supported, it will limit access to the lands west of Highway 6 if/when these lands are developed to be achieved opposite this proposed location or alternative municipal roads.

The Ministry of Transportation (MTO) has reviewed the Terms of Reference (ToR) attached for the Traffic Impact Study (TIS) to support the proposed development on 182 Elora Street N, Harriston ON. The following outlines our comments:

i. The report shall follow the MTO Traffic Impact Study Guidelines, (attached for your reference, 2023 version), to assess the future impact of the proposed development to identify if there are any warranted highway/road improvements.
ii. Any data collection required shall be collected by a RAQS qualified consultant/company.
iii. Synchro version 12 should be used, and the Digital Synchro files (version 12) shall be included to form a complete submission.
iv. The MTO requires a 2% growth rate to be applied.
v. Sightline analysis shall be included.
    - Existing conditions, confirmed with field verified measurements, compared to TAC with mitigation measures provided if the sightlines don't meet TAC, for Highway 6.
vi. The report shall include LT and RT lane analysis at both access locations proposed on Highway 6.
vii. All intersection capacity analysis on impacted intersections within MTO facilities should follow MTO/TAC protocols.
viii. The need for geometric improvements shall be reviewed at all locations in the study area and for each proposed development stage. The TIS shall clearly identify transportation impacts by movement, the transportation system improvements that are needed to mitigate these impacts, and the timing of any recommended improvements. A schematic representation of

all geometric improvements shall be included as part of the TIS, identifying lane arrangements and intersection improvements for each horizon year.

ix. Signal warrants must be conducted at both access locations proposed on Highway 6.
    - The need for traffic signals and/or underground traffic signal utility provisions shall be reviewed at all locations affected by the proposed development and for each proposed development stage.
    - Determination of whether traffic signals or provisions for signals are warranted shall be made according to the process described in OTM Book 12.
    - Intersection timing and traffic signal improvements required due to development or redevelopment shall be considered as improvements in the TIS.

TOR DISCLAIMER: Although all efforts have been made to ensure the most up to date, proper information and data has been provided, details may be missed or unintentionally incorrect. In all cases if items are missed/incorrect, to reduce any delay to the proponent and the development schedule, upon review of a submitted TIS, MTO may require update an erroneous item. Furthermore, RAQS approved consultants should identify any discrepancies and follow up with MTO prior to completing the study and refer to the latest MTO TIS guidelines.

Once you have had the opportunity to review, should you have any questions MTO would be more than willing to discuss any items further.

Regards,

Allan Hodgins
Corridor Management Planner | West Operations | Operations Division
Ministry of Transportation | Ontario Public Service
226-973-8580 | allan.hodgins@ontario.ca

Ontario

Taking pride in strengthening Ontario, its places and its people

---

From: Hodgins, Allan (MTO)
Sent: Monday, June 17, 2024 9:24 PM
To: Matt Brouwer <mbrouwer@ptsl.com>
Cc: aevans@ptsl.com
Subject: FW: (230599 968 St David St, Fergus) TIS Scope

Hi Matt,

Just wanted to give you an update, we are reviewing the ToR for the TIS provided below for the concept plan attached, noting the “secondary emergency access” to the north is being requested as a full motion stop controlled “T” intersection with Highway 6 (St David St).

I do not have a timeline for providing comments at this time, but didn’t want to leave to hanging without an update for to long. Once I know more, I will send you another quick update to confirm.

Regards,

Allan Hodgins
Corridor Management Planner | West Operations | Operations Division
Ministry of Transportation | Ontario Public Service
226-973-8580 | allan.hodgins@ontario.ca

Ontario

Taking pride in strengthening Ontario, its places and its people

---

From: Matt Brouwer <mbrouwer@ptsl.com>
Sent: Wednesday, March 20, 2024 10:28 AM
To: Hodgins, Allan (MTO) <Allan.Hodgins@ontario.ca>
Cc: Andrew Evans <aevans@ptsl.com>
Subject: (230599 968 St David St, Fergus) TIS Scope

Hi Allan,

I have another TIS near the other I contacted you about in Fergus. This one is just a little further north on St David Street at 968 St David St, on the other side of TIS we did earlier for 950-960 St David St. I’ve attached the proposed concept plan. It shows an access opposite of Sideroad 18 as well as two other accesses north of there. I don’t think that they will likely end up at 3 access… probably just 2, but that’s still being worked out. I know the developer has had some contact with the MTO and Municipality about the status of St David St / Hwy 6, but I’m not sure if that necessarily will feed into the TIS in a major way, since we’ll have to do one and it’ll be the same guidelines we follow. Anyway, I’d like to get the scope approved with you on this. It’ll be very similar to the TIS we did at 950/960 St David, and the one I proposed to you for 930 St David St.

For the intersections in our study area, based on the size and location of the development I suggest:

- St David St & Sideroad 19 / proposed access
- St David St & Sideroad 18
- Any additional accesses onto St David St / Highway 6.

For background growth rate, we've used 1% in the TIS we did for 950/960 St David St last year, and that's what I proposed for the 930 St David St TIS. Would this still apply?

We'll include 950/960 St David St as a background development. Let me know how you would like to handle forecasts from 930 St David St, since there hasn't been an application filed for it yet, since it's underway.

Otherwise, we'll follow the MTO TIS guidelines.

Thanks,

Matt Brouwer, P.Eng.
Senior Project Manager, Associate
(he/him)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Road, Cambridge ON N1R 8J8
p: 519.896.3163 x201
m: 519.498.2663
e: mbrouwer@ptsl.com
w: www.ptsl.com

Appendix B

Traffic Data

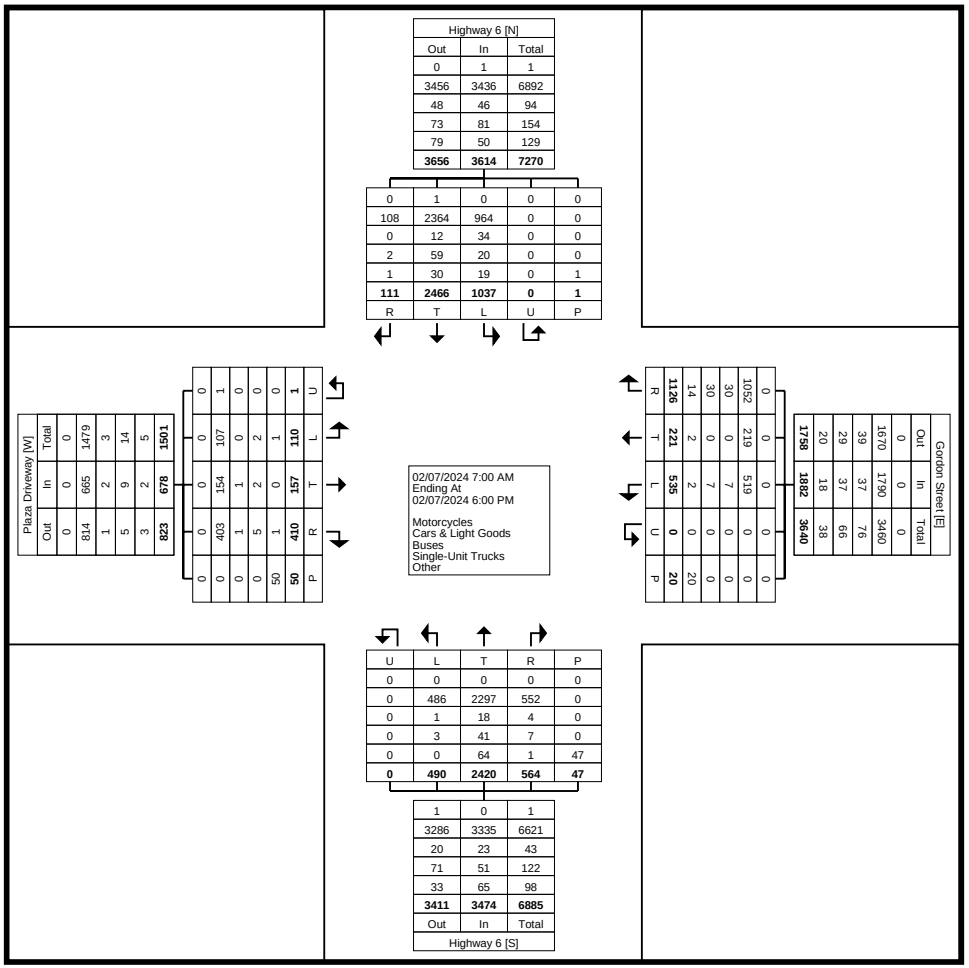
Count Name: Highway 6 & Gordon Street
Site Code: 230599
Start Date: 02/07/2024

Turning Movement Data

Start Time	Plaza Driveway Eastbound						Gordon Street Westbound						Highway 6 Northbound						Highway 6 Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
7:00 AM	0	0	3	0	0	3	7	0	30	0	0	37	2	33	15	0	0	50	22	71	1	0	0	94	184
7:15 AM	0	0	3	0	1	3	9	0	32	0	1	41	2	59	11	0	0	72	40	79	0	0	0	119	235
7:30 AM	0	1	0	0	2	1	19	0	29	0	1	48	2	61	14	0	0	77	49	80	0	0	0	129	255
7:45 AM	2	1	2	0	0	5	13	2	39	0	0	54	7	64	25	0	3	96	57	82	1	0	0	140	295
Hourly Total	2	2	8	0	3	12	48	2	130	0	2	180	13	217	65	0	3	295	168	312	2	0	0	482	969
8:00 AM	0	2	6	0	0	8	15	1	38	0	0	54	3	76	7	0	1	86	41	82	0	0	0	123	271
8:15 AM	0	4	2	0	0	6	20	1	41	0	0	62	2	51	9	0	1	62	30	101	2	0	0	133	263
8:30 AM	1	1	3	0	1	5	22	1	24	0	1	47	4	61	12	0	0	77	49	90	4	0	0	143	272
8:45 AM	0	1	3	0	5	4	11	2	41	0	2	54	14	70	32	0	1	116	39	97	1	0	0	137	311
Hourly Total	1	8	14	0	6	23	68	5	144	0	3	217	23	258	60	0	3	341	159	370	7	0	0	536	1117
9:00 AM	3	4	14	0	4	21	15	8	33	0	0	56	4	62	19	0	2	85	21	74	2	0	0	97	259
9:15 AM	0	3	8	0	1	11	15	6	24	0	0	45	8	59	7	0	1	74	21	63	7	0	0	91	221
9:30 AM	0	2	8	0	1	10	8	4	23	0	1	35	8	64	10	0	1	82	22	69	3	0	0	94	221
9:45 AM	3	1	8	0	1	12	7	2	13	0	0	22	18	68	16	0	1	102	20	63	2	0	0	85	221
Hourly Total	6	10	38	0	7	54	45	20	93	0	1	158	38	253	52	0	5	343	84	269	14	0	0	367	922
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:30 AM	4	4	14	0	2	22	13	8	19	0	1	40	12	54	12	0	0	78	15	72	8	0	0	95	235
11:45 AM	8	4	19	0	0	31	18	4	23	0	0	45	18	73	13	0	1	104	23	68	1	0	0	92	272
Hourly Total	12	8	33	0	2	53	31	12	42	0	1	85	30	127	25	0	1	182	38	140	9	0	0	187	507
12:00 PM	3	7	16	0	1	26	22	13	24	0	2	59	21	61	20	0	1	102	13	70	3	0	0	86	273
12:15 PM	4	7	9	0	2	20	20	3	20	0	0	43	16	70	19	0	3	105	20	79	8	0	0	107	275
12:30 PM	3	8	21	0	4	32	14	10	33	0	1	57	21	84	15	0	2	120	23	83	4	0	0	110	319
12:45 PM	3	8	15	0	1	26	17	5	29	0	1	51	21	71	18	0	0	110	29	90	5	0	0	124	311
Hourly Total	13	30	61	0	8	104	73	31	106	0	4	210	79	286	72	0	6	437	85	322	20	0	0	427	1178
1:00 PM	3	2	18	0	0	23	21	6	24	0	1	51	15	66	19	0	0	100	18	84	7	0	0	109	283
1:15 PM	3	5	17	1	2	26	9	8	21	0	0	38	17	80	15	0	5	112	15	79	5	0	0	99	275
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hourly Total	6	7	35	1	2	49	30	14	45	0	1	89	32	146	34	0	5	212	33	163	12	0	0	208	558
3:00 PM	6	3	12	0	3	21	25	6	35	0	1	66	15	75	19	0	2	109	29	62	7	0	0	98	294
3:15 PM	4	6	17	0	8	27	19	6	50	0	0	75	21	100	27	0	5	148	38	77	4	0	0	119	369
3:30 PM	9	10	24	0	1	43	15	12	42	0	2	69	25	102	26	0	1	153	38	62	3	0	0	103	368
3:45 PM	2	10	17	0	4	29	20	12	37	0	0	69	25	92	19	0	3	136	41	92	4	0	0	137	371
Hourly Total	21	29	70	0	16	120	79	36	164	0	3	279	86	369	91	0	11	546	146	293	18	0	0	457	1402
4:00 PM	6	9	23	0	0	38	17	10	61	0	0	88	24	85	18	0	2	127	31	78	2	0	0	111	364
4:15 PM	6	6	22	0	0	34	17	11	46	0	0	74	24	100	18	0	0	142	41	53	3	0	0	97	347

4:30 PM	8	7	20	0	4	35	28	13	64	0	0	105	35	99	18	0	4	152	44	70	5	0	0	119	411
4:45 PM	4	11	18	0	0	33	18	18	57	0	0	93	28	88	34	0	3	150	49	90	3	0	0	142	418
Hourly Total	24	33	83	0	4	140	80	52	228	0	0	360	111	372	88	0	9	571	165	291	13	0	0	469	1540
5:00 PM	9	11	20	0	0	40	19	12	53	0	3	84	25	114	19	0	0	158	49	86	2	0	0	137	419
5:15 PM	7	6	16	0	0	29	14	10	39	0	0	63	12	99	24	0	1	135	41	74	5	0	1	120	347
5:30 PM	5	7	14	0	1	26	21	15	40	0	2	76	18	93	17	0	1	128	37	72	3	0	0	112	342
5:45 PM	4	6	18	0	1	28	27	12	42	0	0	81	23	86	17	0	2	126	32	74	6	0	0	112	347
Hourly Total	25	30	68	0	2	123	81	49	174	0	5	304	78	392	77	0	4	547	159	306	16	0	1	481	1455
Grand Total	110	157	410	1	50	678	535	221	1126	0	20	1882	490	2420	564	0	47	3474	1037	2466	111	0	1	3614	9648
Approach %	16.2	23.2	60.5	0.1	-	-	28.4	11.7	59.8	0.0	-	-	14.1	69.7	16.2	0.0	-	-	28.7	68.2	3.1	0.0	-	-	-
Total %	1.1	1.6	4.2	0.0	-	7.0	5.5	2.3	11.7	0.0	-	19.5	5.1	25.1	5.8	0.0	-	36.0	10.7	25.6	1.2	0.0	-	37.5	-
Motorcycles	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	1	0	0	-	1	1
% Motorcycles	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Cars & Light Goods	107	154	403	1	-	665	519	219	1052	0	-	1790	486	2297	552	0	-	3335	964	2364	108	0	-	3436	9226
% Cars & Light Goods	97.3	98.1	98.3	100.0	-	98.1	97.0	99.1	93.4	-	-	95.1	99.2	94.9	97.9	-	-	96.0	93.0	95.9	97.3	-	-	95.1	95.6
Buses	0	1	1	0	-	2	7	0	30	0	-	37	1	18	4	0	-	23	34	12	0	0	-	46	108
% Buses	0.0	0.6	0.2	0.0	-	0.3	1.3	0.0	2.7	-	-	2.0	0.2	0.7	0.7	-	-	0.7	3.3	0.5	0.0	-	-	1.3	1.1
Single-Unit Trucks	2	2	5	0	-	9	7	0	30	0	-	37	3	41	7	0	-	51	20	59	2	0	-	81	178
% Single-Unit Trucks	1.8	1.3	1.2	0.0	-	1.3	1.3	0.0	2.7	-	-	2.0	0.6	1.7	1.2	-	-	1.5	1.9	2.4	1.8	-	-	2.2	1.8
Articulated Trucks	1	0	1	0	-	2	2	0	13	0	-	15	0	64	1	0	-	65	19	30	1	0	-	50	132
% Articulated Trucks	0.9	0.0	0.2	0.0	-	0.3	0.4	0.0	1.2	-	-	0.8	0.0	2.6	0.2	-	-	1.9	1.8	1.2	0.9	-	-	1.4	1.4
Bicycles on Road	0	0	0	0	-	0	0	2	1	0	-	3	0	0	0	0	-	0	0	0	0	0	-	0	3
% Bicycles on Road	0.0	0.0	0.0	0.0	-	0.0	0.0	0.9	0.1	-	-	0.2	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	1	-	-	-	-	-	2	-	-	-	-	-	2	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	2.0	-	-	-	-	-	10.0	-	-	-	-	-	4.3	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	49	-	-	-	-	-	18	-	-	-	-	-	45	-	-	-	-	-	1	-	-
% Pedestrians	-	-	-	-	98.0	-	-	-	-	-	90.0	-	-	-	-	-	95.7	-	-	-	-	-	100.0	-	-

Count Name: Highway 6 & Gordon Street
Site Code: 230599
Start Date: 02/07/2024
Page No: 3



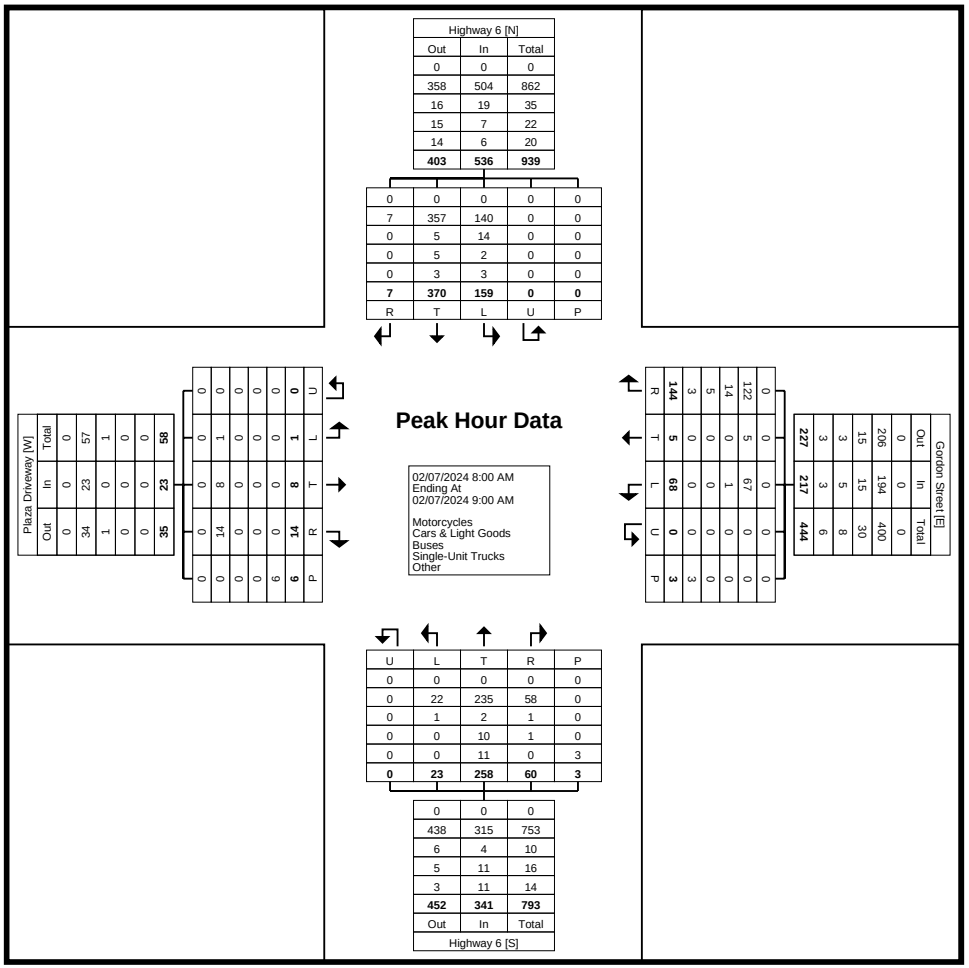
Turning Movement Data Plot

Turning Movement Peak Hour Data (8:00 AM)

Count Name: Highway 6 & Gordon Street
Site Code: 230599
Start Date: 02/07/2024

Start Time	Plaza Driveway Eastbound						Gordon Street Westbound						Highway 6 Northbound						Highway 6 Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
8:00 AM	0	2	6	0	0	8	15	1	38	0	0	54	3	76	7	0	1	86	41	82	0	0	0	123	271
8:15 AM	0	4	2	0	0	6	20	1	41	0	0	62	2	51	9	0	1	62	30	101	2	0	0	133	263
8:30 AM	1	1	3	0	1	5	22	1	24	0	1	47	4	61	12	0	0	77	49	90	4	0	0	143	272
8:45 AM	0	1	3	0	5	4	11	2	41	0	2	54	14	70	32	0	1	116	39	97	1	0	0	137	311
Total	1	8	14	0	6	23	68	5	144	0	3	217	23	258	60	0	3	341	159	370	7	0	0	536	1117
Approach %	4.3	34.8	60.9	0.0	-	-	31.3	2.3	66.4	0.0	-	-	6.7	75.7	17.6	0.0	-	-	29.7	69.0	1.3	0.0	-	-	-
Total %	0.1	0.7	1.3	0.0	-	2.1	6.1	0.4	12.9	0.0	-	19.4	2.1	23.1	5.4	0.0	-	30.5	14.2	33.1	0.6	0.0	-	48.0	-
PHF	0.250	0.500	0.583	0.000	-	0.719	0.773	0.625	0.878	0.000	-	0.875	0.411	0.849	0.469	0.000	-	0.735	0.811	0.916	0.438	0.000	-	0.937	0.898
Motorcycles	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Motorcycles	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Cars & Light Goods	1	8	14	0	-	23	67	5	122	0	-	194	22	235	58	0	-	315	140	357	7	0	-	504	1036
% Cars & Light Goods	100.0	100.0	100.0	-	-	100.0	98.5	100.0	84.7	-	-	89.4	95.7	91.1	96.7	-	-	92.4	88.1	96.5	100.0	-	-	94.0	92.7
Buses	0	0	0	0	-	0	1	0	14	0	-	15	1	2	1	0	-	4	14	5	0	0	-	19	38
% Buses	0.0	0.0	0.0	-	-	0.0	1.5	0.0	9.7	-	-	6.9	4.3	0.8	1.7	-	-	1.2	8.8	1.4	0.0	-	-	3.5	3.4
Single-Unit Trucks	0	0	0	0	-	0	0	0	5	0	-	5	0	10	1	0	-	11	2	5	0	0	-	7	23
% Single-Unit Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.0	3.5	-	-	2.3	0.0	3.9	1.7	-	-	3.2	1.3	1.4	0.0	-	-	1.3	2.1
Articulated Trucks	0	0	0	0	-	0	0	0	3	0	-	3	0	11	0	0	-	11	3	3	0	0	-	6	20
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.0	2.1	-	-	1.4	0.0	4.3	0.0	-	-	3.2	1.9	0.8	0.0	-	-	1.1	1.8
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	6	-	-	-	-	-	3	-	-	-	-	-	3	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-

Count Name: Highway 6 & Gordon Street
Site Code: 230599
Start Date: 02/07/2024
Page No: 5



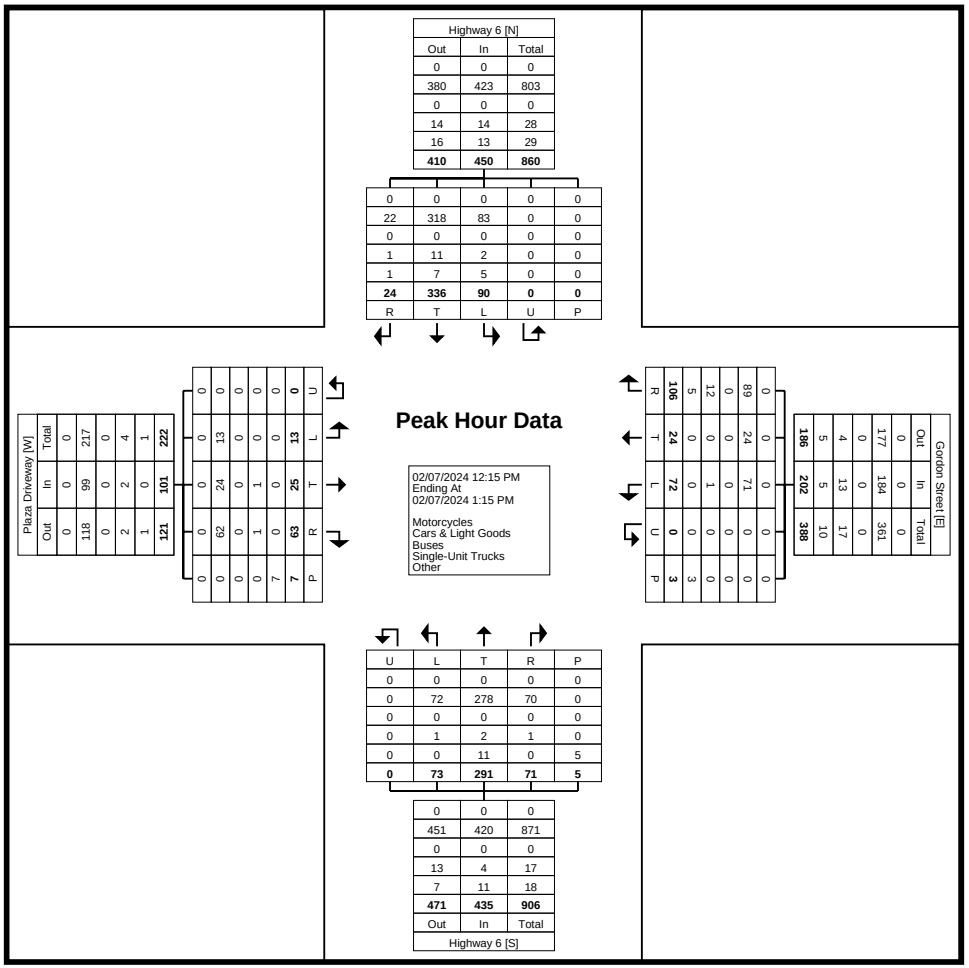
Turning Movement Peak Hour Data Plot (8:00 AM)

Count Name: Highway 6 & Gordon Street
Site Code: 230599
Start Date: 02/07/2024

Turning Movement Peak Hour Data (12:15 PM)

Start Time	Plaza Driveway Eastbound						Gordon Street Westbound						Highway 6 Northbound						Highway 6 Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
12:15 PM	4	7	9	0	2	20	20	3	20	0	0	43	16	70	19	0	3	105	20	79	8	0	0	107	275
12:30 PM	3	8	21	0	4	32	14	10	33	0	1	57	21	84	15	0	2	120	23	83	4	0	0	110	319
12:45 PM	3	8	15	0	1	26	17	5	29	0	1	51	21	71	18	0	0	110	29	90	5	0	0	124	311
1:00 PM	3	2	18	0	0	23	21	6	24	0	1	51	15	66	19	0	0	100	18	84	7	0	0	109	283
Total	13	25	63	0	7	101	72	24	106	0	3	202	73	291	71	0	5	435	90	336	24	0	0	450	1188
Approach %	12.9	24.8	62.4	0.0	-	-	35.6	11.9	52.5	0.0	-	-	16.8	66.9	16.3	0.0	-	-	20.0	74.7	5.3	0.0	-	-	-
Total %	1.1	2.1	5.3	0.0	-	8.5	6.1	2.0	8.9	0.0	-	17.0	6.1	24.5	6.0	0.0	-	36.6	7.6	28.3	2.0	0.0	-	37.9	-
PHF	0.813	0.781	0.750	0.000	-	0.789	0.857	0.600	0.803	0.000	-	0.886	0.869	0.866	0.934	0.000	-	0.906	0.776	0.933	0.750	0.000	-	0.907	0.931
Motorcycles	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Motorcycles	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Cars & Light Goods	13	24	62	0	-	99	71	24	89	0	-	184	72	278	70	0	-	420	83	318	22	0	-	423	1126
% Cars & Light Goods	100.0	96.0	98.4	-	-	98.0	98.6	100.0	84.0	-	-	91.1	98.6	95.5	98.6	-	-	96.6	92.2	94.6	91.7	-	-	94.0	94.8
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Buses	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Single-Unit Trucks	0	1	1	0	-	2	1	0	12	0	-	13	1	2	1	0	-	4	2	11	1	0	-	14	33
% Single-Unit Trucks	0.0	4.0	1.6	-	-	2.0	1.4	0.0	11.3	-	-	6.4	1.4	0.7	1.4	-	-	0.9	2.2	3.3	4.2	-	-	3.1	2.8
Articulated Trucks	0	0	0	0	-	0	0	0	4	0	-	4	0	11	0	0	-	11	5	7	1	0	-	13	28
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.0	3.8	-	-	2.0	0.0	3.8	0.0	-	-	2.5	5.6	2.1	4.2	-	-	2.9	2.4
Bicycles on Road	0	0	0	0	-	0	0	0	1	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	1
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.9	-	-	0.5	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.1
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	33.3	-	-	-	-	-	0.0	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	7	-	-	-	-	-	2	-	-	-	-	-	5	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	66.7	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-

Count Name: Highway 6 & Gordon Street
Site Code: 230599
Start Date: 02/07/2024
Page No: 7

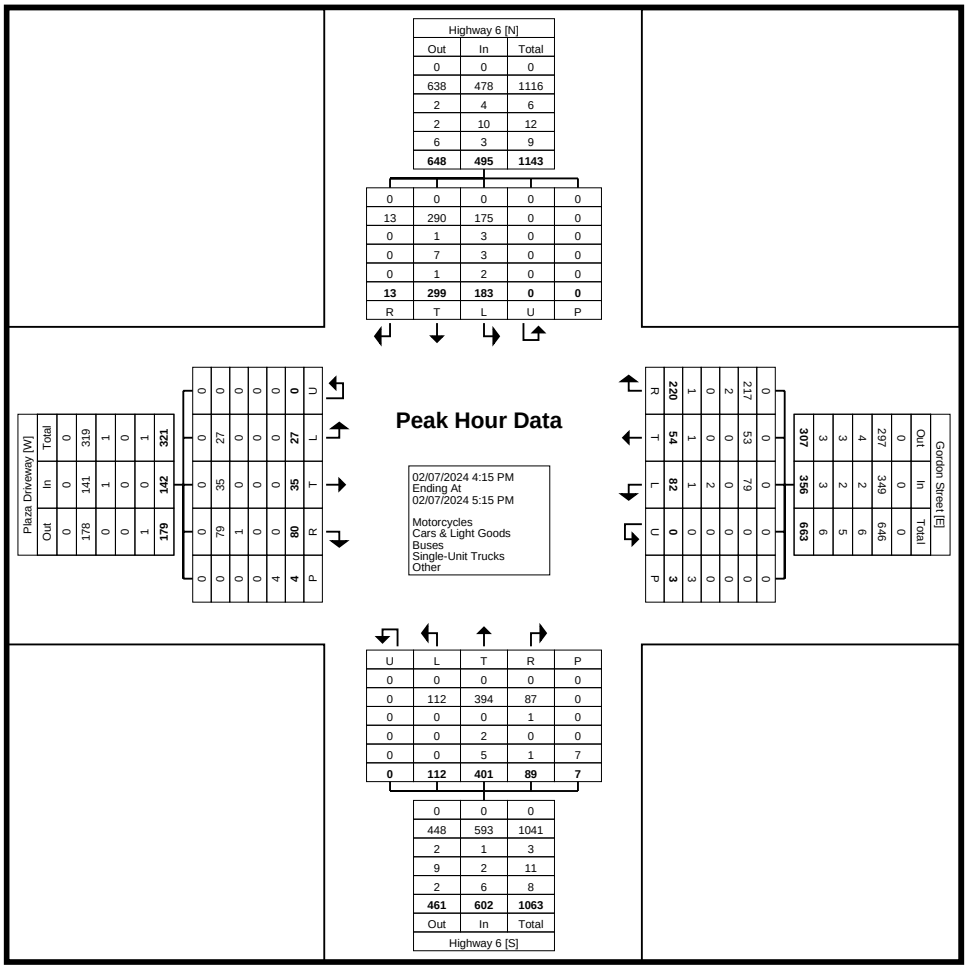


Turning Movement Peak Hour Data Plot (12:15 PM)

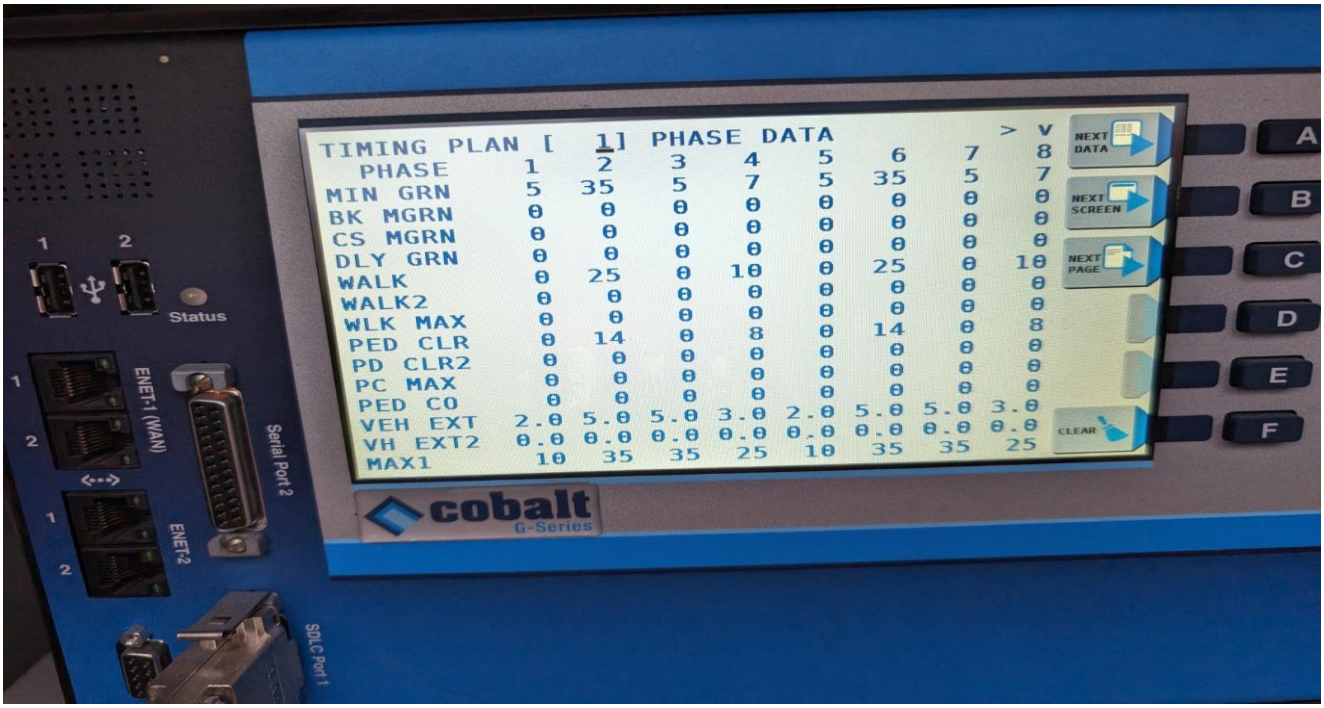
Count Name: Highway 6 & Gordon Street
Site Code: 230599
Start Date: 02/07/2024

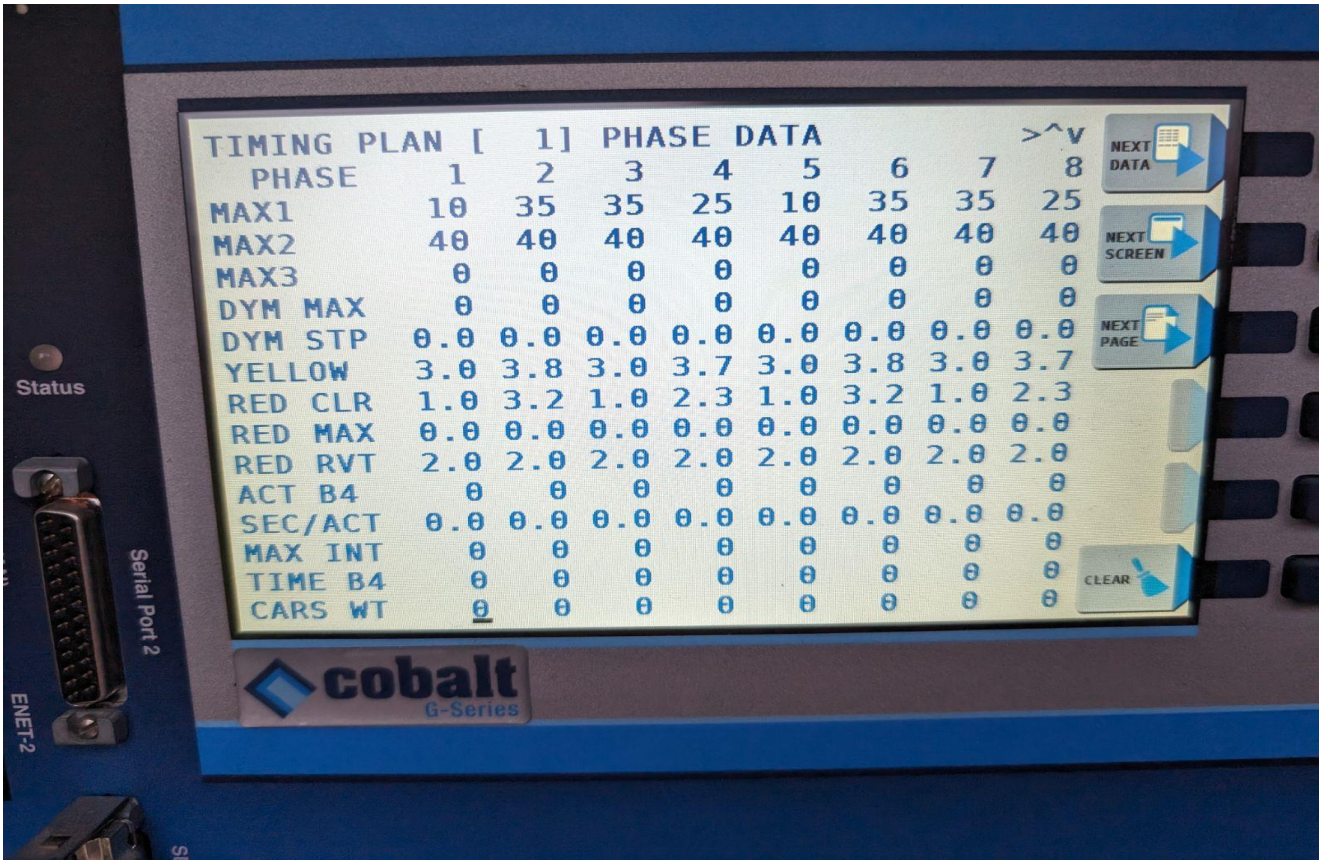
Turning Movement Peak Hour Data (4:15 PM)

Start Time	Plaza Driveway Eastbound						Gordon Street Westbound						Highway 6 Northbound						Highway 6 Southbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
4:15 PM	6	6	22	0	0	34	17	11	46	0	0	74	24	100	18	0	0	142	41	53	3	0	0	97	347
4:30 PM	8	7	20	0	4	35	28	13	64	0	0	105	35	99	18	0	4	152	44	70	5	0	0	119	411
4:45 PM	4	11	18	0	0	33	18	18	57	0	0	93	28	88	34	0	3	150	49	90	3	0	0	142	418
5:00 PM	9	11	20	0	0	40	19	12	53	0	3	84	25	114	19	0	0	158	49	86	2	0	0	137	419
Total	27	35	80	0	4	142	82	54	220	0	3	356	112	401	89	0	7	602	183	299	13	0	0	495	1595
Approach %	19.0	24.6	56.3	0.0	-	-	23.0	15.2	61.8	0.0	-	-	18.6	66.6	14.8	0.0	-	-	37.0	60.4	2.6	0.0	-	-	-
Total %	1.7	2.2	5.0	0.0	-	8.9	5.1	3.4	13.8	0.0	-	22.3	7.0	25.1	5.6	0.0	-	37.7	11.5	18.7	0.8	0.0	-	31.0	-
PHF	0.750	0.795	0.909	0.000	-	0.888	0.732	0.750	0.859	0.000	-	0.848	0.800	0.879	0.654	0.000	-	0.953	0.934	0.831	0.650	0.000	-	0.871	0.952
Motorcycles	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Motorcycles	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Cars & Light Goods	27	35	79	0	-	141	79	53	217	0	-	349	112	394	87	0	-	593	175	290	13	0	-	478	1561
% Cars & Light Goods	100.0	100.0	98.8	-	-	99.3	96.3	98.1	98.6	-	-	98.0	100.0	98.3	97.8	-	-	98.5	95.6	97.0	100.0	-	-	96.6	97.9
Buses	0	0	1	0	-	1	0	0	2	0	-	2	0	0	1	0	-	1	3	1	0	0	-	4	8
% Buses	0.0	0.0	1.3	-	-	0.7	0.0	0.0	0.9	-	-	0.6	0.0	0.0	1.1	-	-	0.2	1.6	0.3	0.0	-	-	0.8	0.5
Single-Unit Trucks	0	0	0	0	-	0	2	0	0	0	-	2	0	2	0	0	-	2	3	7	0	0	-	10	14
% Single-Unit Trucks	0.0	0.0	0.0	-	-	0.0	2.4	0.0	0.0	-	-	0.6	0.0	0.5	0.0	-	-	0.3	1.6	2.3	0.0	-	-	2.0	0.9
Articulated Trucks	0	0	0	0	-	0	1	0	1	0	-	2	0	5	1	0	-	6	2	1	0	0	-	3	11
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	1.2	0.0	0.5	-	-	0.6	0.0	1.2	1.1	-	-	1.0	1.1	0.3	0.0	-	-	0.6	0.7
Bicycles on Road	0	0	0	0	-	0	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	1
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	1.9	0.0	-	-	0.3	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.1
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	33.3	-	-	-	-	-	0.0	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	4	-	-	-	-	-	2	-	-	-	-	-	7	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	66.7	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-



Turning Movement Peak Hour Data Plot (4:15 PM)


TIMING PLAN [1] PHASE DATA > V
PHASE 1 2 3 4 5 6 7 8
MIN GRN 5 35 5 7 5 35 5 7
BK MGRN 0 0 0 0 0 0 0 0
CS MGRN 0 0 0 0 0 0 0 0
DLY GRN 0 0 0 0 0 0 0 0
WALK 0 25 0 10 0 25 0 10
WALK2 0 0 0 0 0 0 0 0
WLK MAX 0 0 0 0 0 0 0 0
PED CLR 0 14 0 8 0 14 0 8
PD CLR2 0 0 0 0 0 0 0 0
PC MAX 0 0 0 0 0 0 0 0
PED CO 0 0 0 0 0 0 0 0
VEH EXT 2.0 5.0 5.0 3.0 2.0 5.0 5.0 3.0
VH EXT2 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
MAX1 10 35 35 25 10 35 35 25
NEXT DATA
NEXT SCREEN
NEXT PAGE
CLEAR
A
B
C
D
E
F
Status
ENET-1 (WAN)
ENET-2
Serial Port 2
SDLC Port 1
cobalt
G-Series


TIMING PLAN [1] PHASE DATA >^V
PHASE 1 2 3 4 5 6 7 8
MAX1 10 35 35 25 10 35 35 25
MAX2 40 40 40 40 40 40 40 40
MAX3 0 0 0 0 0 0 0 0
DYM MAX 0 0 0 0 0 0 0 0
DYM STP 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
YELLOW 3.0 3.8 3.0 3.7 3.0 3.8 3.0 3.7
RED CLR 1.0 3.2 1.0 2.3 1.0 3.2 1.0 2.3
RED MAX 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
RED RVT 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0
ACT B4 0 0 0 0 0 0 0 0
SEC/ACT 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
MAX INT 0 0 0 0 0 0 0 0
TIME B4 0 0 0 0 0 0 0 0
CARS WT 0 0 0 0 0 0 0 0
NEXT DATA
NEXT SCREEN
NEXT PAGE
CLEAR
Status
Serial Port 2
ENET-2
cobalt
G-Series

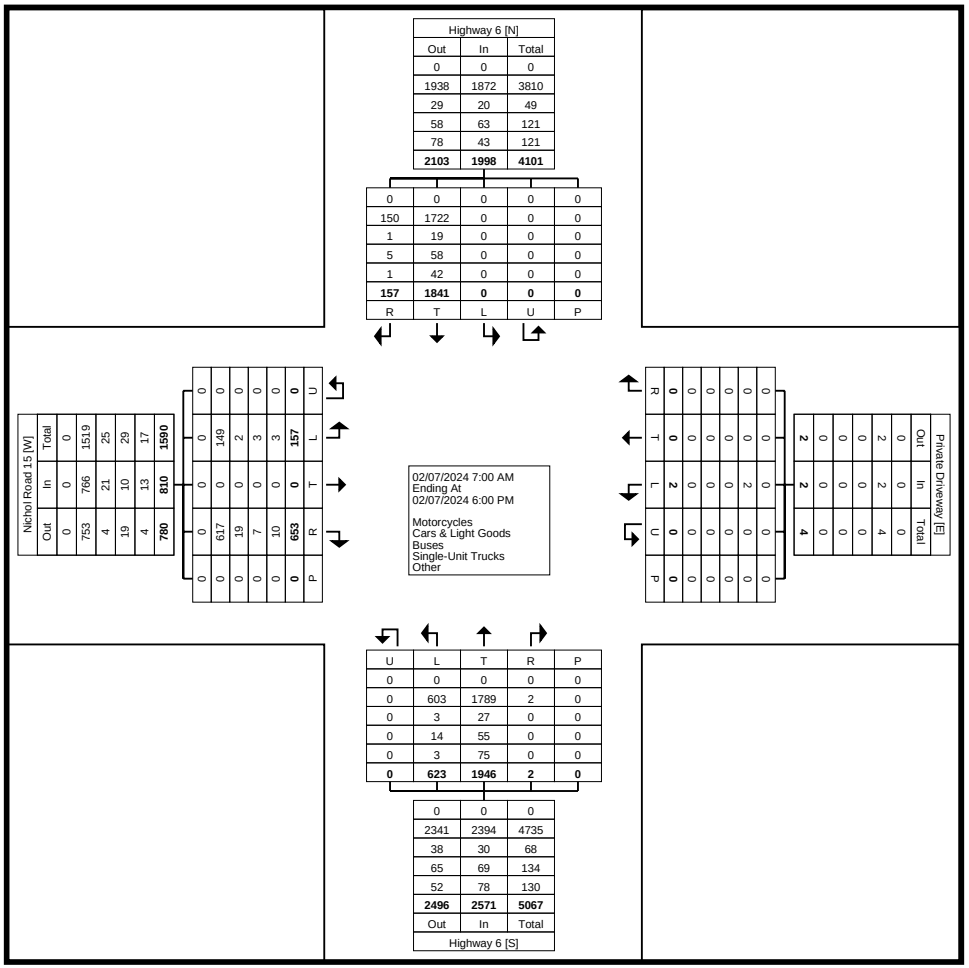
Count Name: Highway 6 & Nichol Road 15
Site Code: 230599
Start Date: 02/07/2024

Turning Movement Data

Start Time	Nichol Road 15 Eastbound						Private Driveway Westbound						Highway 6 Northbound						Highway 6 Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
7:00 AM	6	0	16	0	0	22	0	0	0	0	0	0	14	32	0	0	0	46	0	52	5	0	0	57	125
7:15 AM	3	0	13	0	0	16	0	0	0	0	0	0	22	44	0	0	0	66	0	79	7	0	0	86	168
7:30 AM	9	0	15	0	0	24	0	0	0	0	0	0	23	44	1	0	0	68	0	81	4	0	0	85	177
7:45 AM	5	0	26	0	0	31	0	0	0	0	0	0	22	65	1	0	0	88	0	76	5	0	0	81	200
Hourly Total	23	0	70	0	0	93	0	0	0	0	0	0	81	185	2	0	0	268	0	288	21	0	0	309	670
8:00 AM	4	0	27	0	0	31	0	0	0	0	0	0	28	54	0	0	0	82	0	61	4	0	0	65	178
8:15 AM	3	0	22	0	0	25	1	0	0	0	0	1	25	48	0	0	0	73	0	73	10	0	0	83	182
8:30 AM	6	0	18	0	0	24	1	0	0	0	0	1	23	41	0	0	0	64	0	72	5	0	0	77	166
8:45 AM	3	0	31	0	0	34	0	0	0	0	0	0	15	42	0	0	0	57	0	73	7	0	0	80	171
Hourly Total	16	0	98	0	0	114	2	0	0	0	0	2	91	185	0	0	0	276	0	279	26	0	0	305	697
9:00 AM	3	0	18	0	0	21	0	0	0	0	0	0	15	49	0	0	0	64	0	53	5	0	0	58	143
9:15 AM	5	0	10	0	0	15	0	0	0	0	0	0	15	39	0	0	0	54	0	48	4	0	0	52	121
9:30 AM	3	0	15	0	0	18	0	0	0	0	0	0	10	53	0	0	0	63	0	55	7	0	0	62	143
9:45 AM	2	0	15	0	0	17	0	0	0	0	0	0	12	42	0	0	0	54	0	46	6	0	0	52	123
Hourly Total	13	0	58	0	0	71	0	0	0	0	0	0	52	183	0	0	0	235	0	202	22	0	0	224	530
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:30 AM	5	0	16	0	0	21	0	0	0	0	0	0	10	31	0	0	0	41	0	49	5	0	0	54	116
11:45 AM	1	0	10	0	0	11	0	0	0	0	0	0	20	53	0	0	0	73	0	34	7	0	0	41	125
Hourly Total	6	0	26	0	0	32	0	0	0	0	0	0	30	84	0	0	0	114	0	83	12	0	0	95	241
12:00 PM	3	0	11	0	0	14	0	0	0	0	0	0	23	36	0	0	0	59	0	50	3	0	0	53	126
12:15 PM	3	0	10	0	0	13	0	0	0	0	0	0	17	47	0	0	0	64	0	50	2	0	0	52	129
12:30 PM	6	0	15	0	0	21	0	0	0	0	0	0	12	59	0	0	0	71	0	61	3	0	0	64	156
12:45 PM	2	0	19	0	0	21	0	0	0	0	0	0	10	54	0	0	0	64	0	65	1	0	0	66	151
Hourly Total	14	0	55	0	0	69	0	0	0	0	0	0	62	196	0	0	0	258	0	226	9	0	0	235	562
1:00 PM	4	0	16	0	0	20	0	0	0	0	0	0	18	48	0	0	0	66	0	59	3	0	0	62	148
1:15 PM	2	0	15	0	0	17	0	0	0	0	0	0	16	58	0	0	0	74	0	48	7	0	0	55	146
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hourly Total	6	0	31	0	0	37	0	0	0	0	0	0	34	106	0	0	0	140	0	107	10	0	0	117	294
3:00 PM	8	0	22	0	0	30	0	0	0	0	0	0	17	73	0	0	0	90	0	45	0	0	0	45	165
3:15 PM	5	0	28	0	0	33	0	0	0	0	0	0	29	79	0	0	0	108	0	49	6	0	0	55	196
3:30 PM	11	0	26	0	0	37	0	0	0	0	0	0	20	82	0	0	0	102	0	50	6	0	0	56	195
3:45 PM	7	0	30	0	0	37	0	0	0	0	0	0	20	78	0	0	0	98	0	57	6	0	0	63	198
Hourly Total	31	0	106	0	0	137	0	0	0	0	0	0	86	312	0	0	0	398	0	201	18	0	0	219	754
4:00 PM	4	0	26	0	0	30	0	0	0	0	0	0	22	83	0	0	0	105	0	47	6	0	0	53	188
4:15 PM	13	0	21	0	0	34	0	0	0	0	0	0	25	79	0	0	0	104	0	57	6	0	0	63	201

4:30 PM	6	0	30	0	0	36	0	0	0	0	0	0	34	103	0	0	0	137	0	49	8	0	0	57	230
4:45 PM	4	0	33	0	0	37	0	0	0	0	0	0	23	82	0	0	0	105	0	67	7	0	0	74	216
Hourly Total	27	0	110	0	0	137	0	0	0	0	0	0	104	347	0	0	0	451	0	220	27	0	0	247	835
5:00 PM	7	0	30	0	0	37	0	0	0	0	0	0	23	102	0	0	0	125	0	66	5	0	0	71	233
5:15 PM	5	0	25	0	0	30	0	0	0	0	0	0	28	88	0	0	0	116	0	65	2	0	0	67	213
5:30 PM	5	0	23	0	0	28	0	0	0	0	0	0	13	81	0	0	0	94	0	46	2	0	0	48	170
5:45 PM	4	0	21	0	0	25	0	0	0	0	0	0	19	77	0	0	0	96	0	58	3	0	0	61	182
Hourly Total	21	0	99	0	0	120	0	0	0	0	0	0	83	348	0	0	0	431	0	235	12	0	0	247	798
Grand Total	157	0	653	0	0	810	2	0	0	0	0	2	623	1946	2	0	0	2571	0	1841	157	0	0	1998	5381
Approach %	19.4	0.0	80.6	0.0	-	-	100.0	0.0	0.0	0.0	-	-	24.2	75.7	0.1	0.0	-	-	0.0	92.1	7.9	0.0	-	-	-
Total %	2.9	0.0	12.1	0.0	-	15.1	0.0	0.0	0.0	0.0	-	0.0	11.6	36.2	0.0	0.0	-	47.8	0.0	34.2	2.9	0.0	-	37.1	-
Motorcycles	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Motorcycles	0.0	-	0.0	-	-	0.0	0.0	-	-	-	-	0.0	0.0	0.0	0.0	-	-	0.0	-	0.0	0.0	-	-	0.0	0.0
Cars & Light Goods	149	0	617	0	-	766	2	0	0	0	-	2	603	1789	2	0	-	2394	0	1722	150	0	-	1872	5034
% Cars & Light Goods	94.9	-	94.5	-	-	94.6	100.0	-	-	-	-	100.0	96.8	91.9	100.0	-	-	93.1	-	93.5	95.5	-	-	93.7	93.6
Buses	2	0	19	0	-	21	0	0	0	0	-	0	3	27	0	0	-	30	0	19	1	0	-	20	71
% Buses	1.3	-	2.9	-	-	2.6	0.0	-	-	-	-	0.0	0.5	1.4	0.0	-	-	1.2	-	1.0	0.6	-	-	1.0	1.3
Single-Unit Trucks	3	0	7	0	-	10	0	0	0	0	-	0	14	55	0	0	-	69	0	58	5	0	-	63	142
% Single-Unit Trucks	1.9	-	1.1	-	-	1.2	0.0	-	-	-	-	0.0	2.2	2.8	0.0	-	-	2.7	-	3.2	3.2	-	-	3.2	2.6
Articulated Trucks	3	0	10	0	-	13	0	0	0	0	-	0	3	75	0	0	-	78	0	42	1	0	-	43	134
% Articulated Trucks	1.9	-	1.5	-	-	1.6	0.0	-	-	-	-	0.0	0.5	3.9	0.0	-	-	3.0	-	2.3	0.6	-	-	2.2	2.5
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	-	0.0	-	-	0.0	0.0	-	-	-	-	0.0	0.0	0.0	0.0	-	-	0.0	-	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Count Name: Highway 6 & Nichol Road 15
Site Code: 230599
Start Date: 02/07/2024
Page No: 3

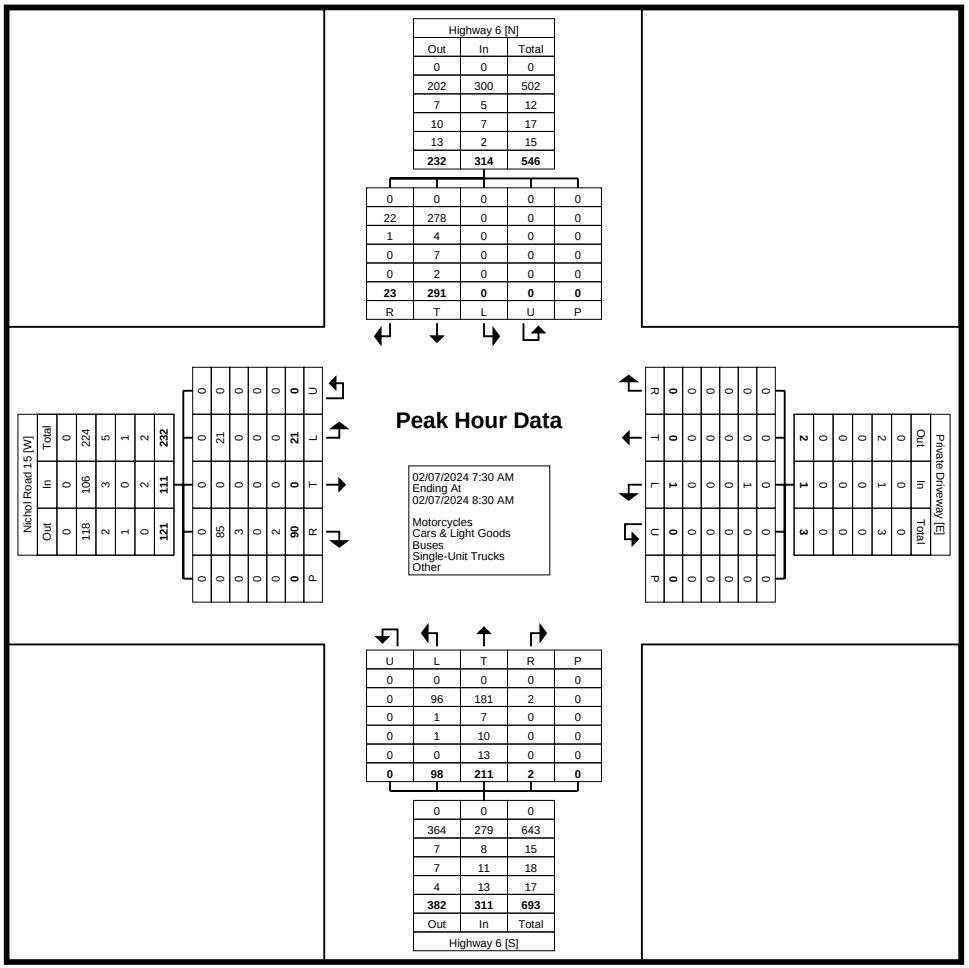


Turning Movement Data Plot

Count Name: Highway 6 & Nichol Road 15
Site Code: 230599
Start Date: 02/07/2024

Turning Movement Peak Hour Data (7:30 AM)

Start Time	Nichol Road 15 Eastbound						Private Driveway Westbound						Highway 6 Northbound						Highway 6 Southbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
7:30 AM	9	0	15	0	0	24	0	0	0	0	0	0	23	44	1	0	0	68	0	81	4	0	0	85	177
7:45 AM	5	0	26	0	0	31	0	0	0	0	0	0	22	65	1	0	0	88	0	76	5	0	0	81	200
8:00 AM	4	0	27	0	0	31	0	0	0	0	0	0	28	54	0	0	0	82	0	61	4	0	0	65	178
8:15 AM	3	0	22	0	0	25	1	0	0	0	0	1	25	48	0	0	0	73	0	73	10	0	0	83	182
Total	21	0	90	0	0	111	1	0	0	0	0	1	98	211	2	0	0	311	0	291	23	0	0	314	737
Approach %	18.9	0.0	81.1	0.0	-	-	100.0	0.0	0.0	0.0	-	-	31.5	67.8	0.6	0.0	-	-	0.0	92.7	7.3	0.0	-	-	-
Total %	2.8	0.0	12.2	0.0	-	15.1	0.1	0.0	0.0	0.0	-	0.1	13.3	28.6	0.3	0.0	-	42.2	0.0	39.5	3.1	0.0	-	42.6	-
PHF	0.583	0.000	0.833	0.000	-	0.895	0.250	0.000	0.000	0.000	-	0.250	0.875	0.812	0.500	0.000	-	0.884	0.000	0.898	0.575	0.000	-	0.924	0.921
Motorcycles	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Motorcycles	0.0	-	0.0	-	-	0.0	0.0	-	-	-	-	0.0	0.0	0.0	0.0	-	-	0.0	-	0.0	0.0	-	-	0.0	0.0
Cars & Light Goods	21	0	85	0	-	106	1	0	0	0	-	1	96	181	2	0	-	279	0	278	22	0	-	300	686
% Cars & Light Goods	100.0	-	94.4	-	-	95.5	100.0	-	-	-	-	100.0	98.0	85.8	100.0	-	-	89.7	-	95.5	95.7	-	-	95.5	93.1
Buses	0	0	3	0	-	3	0	0	0	0	-	0	1	7	0	0	-	8	0	4	1	0	-	5	16
% Buses	0.0	-	3.3	-	-	2.7	0.0	-	-	-	-	0.0	1.0	3.3	0.0	-	-	2.6	-	1.4	4.3	-	-	1.6	2.2
Single-Unit Trucks	0	0	0	0	-	0	0	0	0	0	-	0	1	10	0	0	-	11	0	7	0	0	-	7	18
% Single-Unit Trucks	0.0	-	0.0	-	-	0.0	0.0	-	-	-	-	0.0	1.0	4.7	0.0	-	-	3.5	-	2.4	0.0	-	-	2.2	2.4
Articulated Trucks	0	0	2	0	-	2	0	0	0	0	-	0	0	13	0	0	-	13	0	2	0	0	-	2	17
% Articulated Trucks	0.0	-	2.2	-	-	1.8	0.0	-	-	-	-	0.0	0.0	6.2	0.0	-	-	4.2	-	0.7	0.0	-	-	0.6	2.3
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	-	0.0	-	-	0.0	0.0	-	-	-	-	0.0	0.0	0.0	0.0	-	-	0.0	-	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

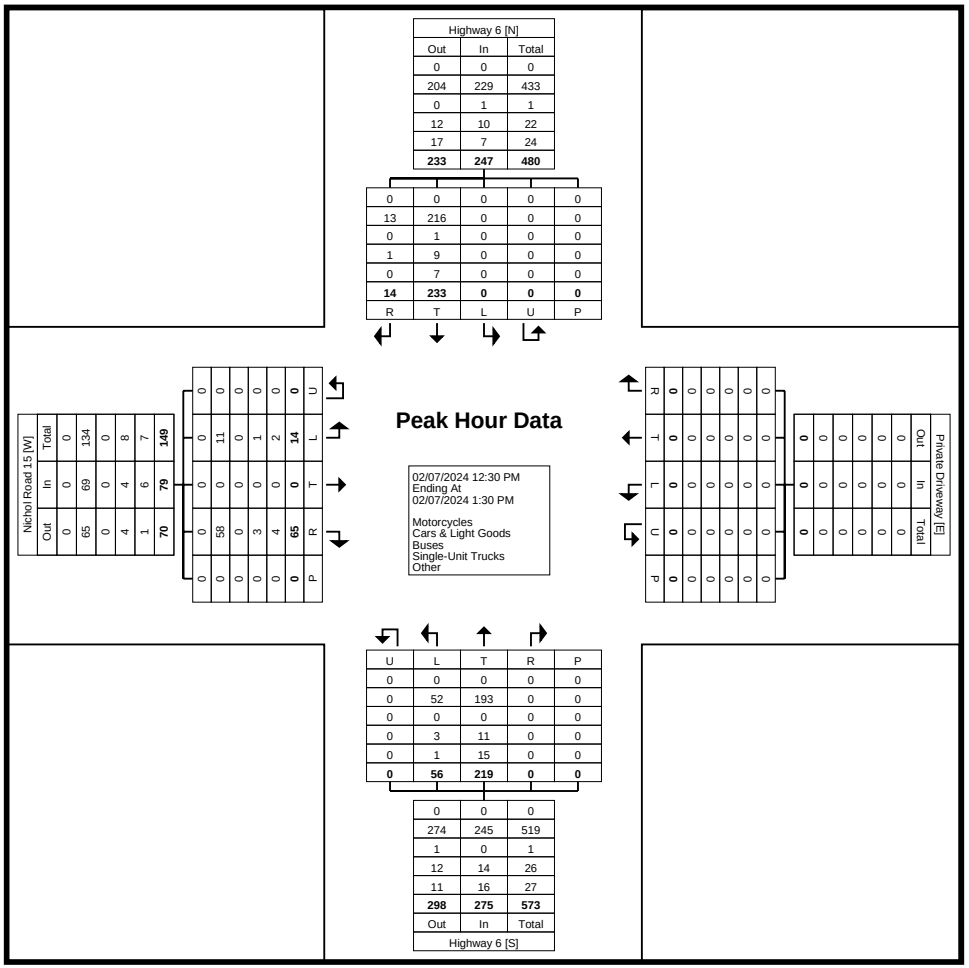


Turning Movement Peak Hour Data Plot (7:30 AM)

Turning Movement Peak Hour Data (12:30 PM)

Count Name: Highway 6 & Nichol Road 15
Site Code: 230599
Start Date: 02/07/2024

Start Time	Nichol Road 15 Eastbound						Private Driveway Westbound						Highway 6 Northbound						Highway 6 Southbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
12:30 PM	6	0	15	0	0	21	0	0	0	0	0	0	12	59	0	0	0	71	0	61	3	0	0	64	156
12:45 PM	2	0	19	0	0	21	0	0	0	0	0	0	10	54	0	0	0	64	0	65	1	0	0	66	151
1:00 PM	4	0	16	0	0	20	0	0	0	0	0	0	18	48	0	0	0	66	0	59	3	0	0	62	148
1:15 PM	2	0	15	0	0	17	0	0	0	0	0	0	16	58	0	0	0	74	0	48	7	0	0	55	146
Total	14	0	65	0	0	79	0	0	0	0	0	0	56	219	0	0	0	275	0	233	14	0	0	247	601
Approach %	17.7	0.0	82.3	0.0	-	-	0.0	0.0	0.0	0.0	-	-	20.4	79.6	0.0	0.0	-	-	0.0	94.3	5.7	0.0	-	-	-
Total %	2.3	0.0	10.8	0.0	-	13.1	0.0	0.0	0.0	0.0	-	0.0	9.3	36.4	0.0	0.0	-	45.8	0.0	38.8	2.3	0.0	-	41.1	-
PHF	0.583	0.000	0.855	0.000	-	0.940	0.000	0.000	0.000	0.000	-	0.000	0.778	0.928	0.000	0.000	-	0.929	0.000	0.896	0.500	0.000	-	0.936	0.963
Motorcycles	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Motorcycles	0.0	-	0.0	-	-	0.0	-	-	-	-	-	-	0.0	0.0	-	-	-	0.0	-	0.0	0.0	-	-	0.0	0.0
Cars & Light Goods	11	0	58	0	-	69	0	0	0	0	-	0	52	193	0	0	-	245	0	216	13	0	-	229	543
% Cars & Light Goods	78.6	-	89.2	-	-	87.3	-	-	-	-	-	-	92.9	88.1	-	-	-	89.1	-	92.7	92.9	-	-	92.7	90.3
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	1	0	0	-	1	1
% Buses	0.0	-	0.0	-	-	0.0	-	-	-	-	-	-	0.0	0.0	-	-	-	0.0	-	0.4	0.0	-	-	0.4	0.2
Single-Unit Trucks	1	0	3	0	-	4	0	0	0	0	-	0	3	11	0	0	-	14	0	9	1	0	-	10	28
% Single-Unit Trucks	7.1	-	4.6	-	-	5.1	-	-	-	-	-	-	5.4	5.0	-	-	-	5.1	-	3.9	7.1	-	-	4.0	4.7
Articulated Trucks	2	0	4	0	-	6	0	0	0	0	-	0	1	15	0	0	-	16	0	7	0	0	-	7	29
% Articulated Trucks	14.3	-	6.2	-	-	7.6	-	-	-	-	-	-	1.8	6.8	-	-	-	5.8	-	3.0	0.0	-	-	2.8	4.8
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	-	0.0	-	-	0.0	-	-	-	-	-	-	0.0	0.0	-	-	-	0.0	-	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

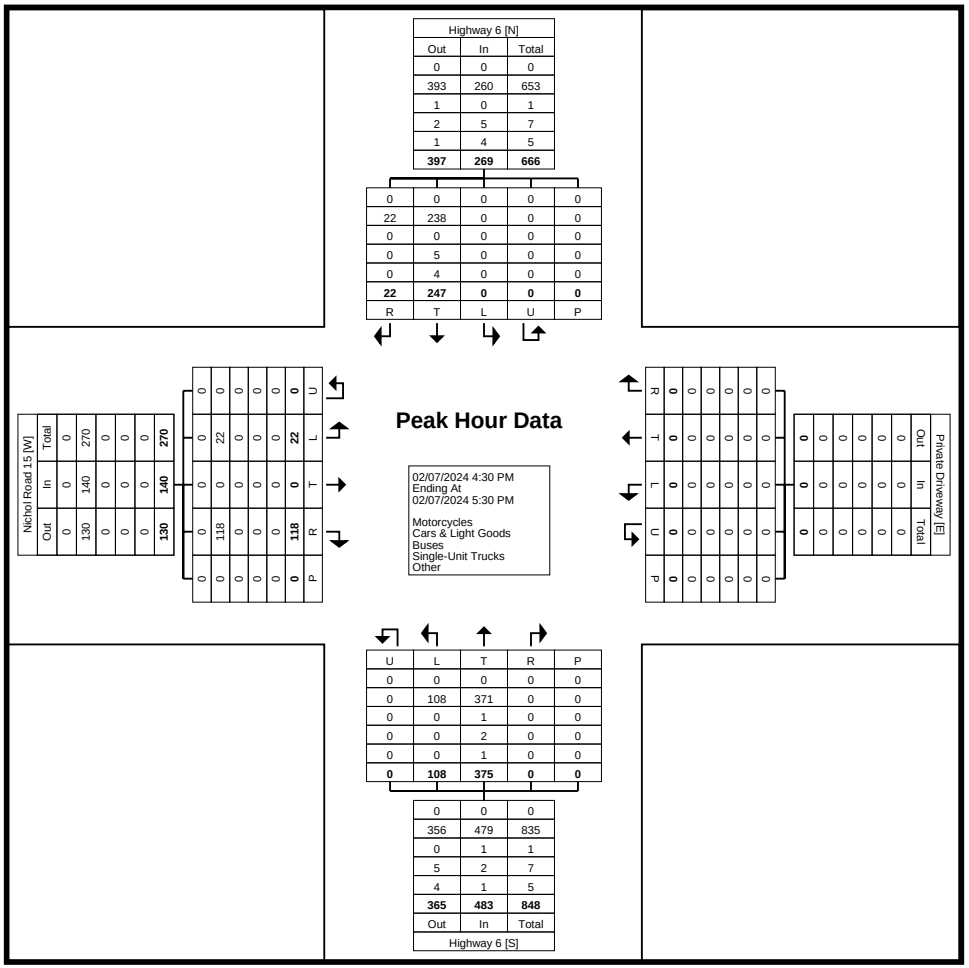


Turning Movement Peak Hour Data Plot (12:30 PM)

Count Name: Highway 6 & Nichol Road 15
Site Code: 230599
Start Date: 02/07/2024

Turning Movement Peak Hour Data (4:30 PM)

Start Time	Nichol Road 15 Eastbound						Private Driveway Westbound						Highway 6 Northbound						Highway 6 Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
4:30 PM	6	0	30	0	0	36	0	0	0	0	0	0	34	103	0	0	0	137	0	49	8	0	0	57	230
4:45 PM	4	0	33	0	0	37	0	0	0	0	0	0	23	82	0	0	0	105	0	67	7	0	0	74	216
5:00 PM	7	0	30	0	0	37	0	0	0	0	0	0	23	102	0	0	0	125	0	66	5	0	0	71	233
5:15 PM	5	0	25	0	0	30	0	0	0	0	0	0	28	88	0	0	0	116	0	65	2	0	0	67	213
Total	22	0	118	0	0	140	0	0	0	0	0	0	108	375	0	0	0	483	0	247	22	0	0	269	892
Approach %	15.7	0.0	84.3	0.0	-	-	0.0	0.0	0.0	0.0	-	-	22.4	77.6	0.0	0.0	-	-	0.0	91.8	8.2	0.0	-	-	-
Total %	2.5	0.0	13.2	0.0	-	15.7	0.0	0.0	0.0	0.0	-	0.0	12.1	42.0	0.0	0.0	-	54.1	0.0	27.7	2.5	0.0	-	30.2	-
PHF	0.786	0.000	0.894	0.000	-	0.946	0.000	0.000	0.000	0.000	-	0.000	0.794	0.910	0.000	0.000	-	0.881	0.000	0.922	0.688	0.000	-	0.909	0.957
Motorcycles	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Motorcycles	0.0	-	0.0	-	-	0.0	-	-	-	-	-	-	0.0	0.0	-	-	-	0.0	-	0.0	0.0	-	-	0.0	0.0
Cars & Light Goods	22	0	118	0	-	140	0	0	0	0	-	0	108	371	0	0	-	479	0	238	22	0	-	260	879
% Cars & Light Goods	100.0	-	100.0	-	-	100.0	-	-	-	-	-	-	100.0	98.9	-	-	-	99.2	-	96.4	100.0	-	-	96.7	98.5
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	1	0	0	-	1	0	0	0	0	-	0	1
% Buses	0.0	-	0.0	-	-	0.0	-	-	-	-	-	-	0.0	0.3	-	-	-	0.2	-	0.0	0.0	-	-	0.0	0.1
Single-Unit Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	2	0	0	-	2	0	5	0	0	-	5	7
% Single-Unit Trucks	0.0	-	0.0	-	-	0.0	-	-	-	-	-	-	0.0	0.5	-	-	-	0.4	-	2.0	0.0	-	-	1.9	0.8
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	1	0	0	-	1	0	4	0	0	-	4	5
% Articulated Trucks	0.0	-	0.0	-	-	0.0	-	-	-	-	-	-	0.0	0.3	-	-	-	0.2	-	1.6	0.0	-	-	1.5	0.6
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	-	0.0	-	-	0.0	-	-	-	-	-	-	0.0	0.0	-	-	-	0.0	-	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Turning Movement Peak Hour Data Plot (4:30 PM)

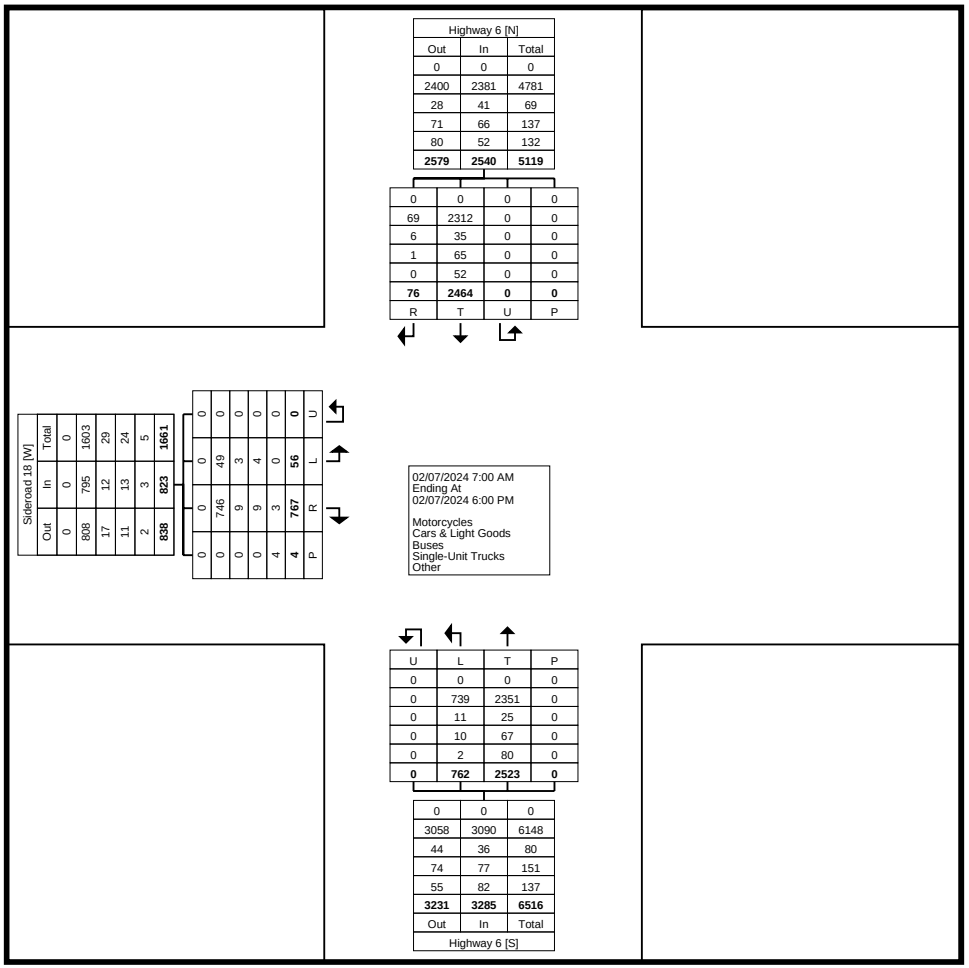
Count Name: Highway 6 & Sideroad 18
Site Code: 230599
Start Date: 02/07/2024
Page No: 1

Turning Movement Data

Start Time	Sideroad 18 Eastbound					Highway 6 Northbound					Highway 6 Southbound					Int. Total
	Left	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	
7:00 AM	3	22	0	0	25	11	51	0	0	62	69	0	0	0	69	156
7:15 AM	4	28	0	0	32	22	62	0	0	84	86	7	0	0	93	209
7:30 AM	2	21	0	0	23	14	73	0	0	87	97	0	0	0	97	207
7:45 AM	2	28	0	0	30	24	77	0	0	101	95	4	0	0	99	230
Hourly Total	11	99	0	0	110	71	263	0	0	334	347	11	0	0	358	802
8:00 AM	1	23	0	0	24	23	86	0	0	109	84	3	0	0	87	220
8:15 AM	6	37	0	0	43	24	64	0	0	88	96	7	0	0	103	234
8:30 AM	2	42	0	0	44	21	58	0	0	79	87	4	0	0	91	214
8:45 AM	2	24	0	0	26	28	59	0	0	87	104	3	0	0	107	220
Hourly Total	11	126	0	0	137	96	267	0	0	363	371	17	0	0	388	888
9:00 AM	3	16	0	0	19	25	63	0	0	88	67	5	0	0	72	179
9:15 AM	0	21	0	0	21	22	53	0	0	75	59	0	0	0	59	155
9:30 AM	0	20	0	0	20	19	62	0	0	81	67	1	0	0	68	169
9:45 AM	1	13	0	0	14	18	51	0	0	69	60	1	0	0	61	144
Hourly Total	4	70	0	0	74	84	229	0	0	313	253	7	0	0	260	647
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:30 AM	0	19	0	0	19	16	42	0	0	58	59	2	0	0	61	138
11:45 AM	0	20	0	0	20	16	72	0	0	88	47	2	0	0	49	157
Hourly Total	0	39	0	0	39	32	114	0	0	146	106	4	0	0	110	295
12:00 PM	0	23	0	0	23	17	61	0	0	78	62	0	0	0	62	163
12:15 PM	0	25	0	0	25	24	60	0	0	84	61	1	0	0	62	171
12:30 PM	0	29	0	0	29	22	76	0	0	98	75	1	0	0	76	203
12:45 PM	2	26	0	0	28	23	61	0	0	84	85	2	0	0	87	199
Hourly Total	2	103	0	0	105	86	258	0	0	344	283	4	0	0	287	736
1:00 PM	1	11	0	0	12	18	62	0	0	80	73	1	0	0	74	166
1:15 PM	1	10	0	0	11	17	72	0	0	89	65	1	0	0	66	166
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hourly Total	2	21	0	0	23	35	134	0	0	169	138	2	0	0	140	332
3:00 PM	6	18	0	0	24	20	88	0	0	108	63	1	0	0	64	196
3:15 PM	6	20	0	0	26	37	99	0	0	136	79	5	0	0	84	246
3:30 PM	5	15	0	0	20	29	94	0	0	123	82	3	0	0	85	228
3:45 PM	1	30	0	1	31	29	94	0	0	123	92	3	0	0	95	249
Hourly Total	18	83	0	1	101	115	375	0	0	490	316	12	0	0	328	919
4:00 PM	0	18	0	0	18	26	109	0	0	135	70	3	0	0	73	226
4:15 PM	2	19	0	0	21	35	101	0	0	136	79	1	0	0	80	237
4:30 PM	3	38	0	0	41	28	137	0	0	165	73	3	0	0	76	282

4:45 PM	0	36	0	0	36	36	101	0	0	137	99	3	0	0	102	275
Hourly Total	5	111	0	0	116	125	448	0	0	573	321	10	0	0	331	1020
5:00 PM	1	34	0	0	35	30	123	0	0	153	98	2	0	0	100	288
5:15 PM	1	26	0	3	27	28	116	0	0	144	83	2	0	0	85	256
5:30 PM	1	33	0	0	34	32	96	0	0	128	75	2	0	0	77	239
5:45 PM	0	22	0	0	22	28	100	0	0	128	73	3	0	0	76	226
Hourly Total	3	115	0	3	118	118	435	0	0	553	329	9	0	0	338	1009
Grand Total	56	767	0	4	823	762	2523	0	0	3285	2464	76	0	0	2540	6648
Approach %	6.8	93.2	0.0	-	-	23.2	76.8	0.0	-	-	97.0	3.0	0.0	-	-	-
Total %	0.8	11.5	0.0	-	12.4	11.5	38.0	0.0	-	49.4	37.1	1.1	0.0	-	38.2	-
Motorcycles	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Motorcycles	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0
Cars & Light Goods	49	746	0	-	795	739	2351	0	-	3090	2312	69	0	-	2381	6266
% Cars & Light Goods	87.5	97.3	-	-	96.6	97.0	93.2	-	-	94.1	93.8	90.8	-	-	93.7	94.3
Buses	3	9	0	-	12	11	25	0	-	36	35	6	0	-	41	89
% Buses	5.4	1.2	-	-	1.5	1.4	1.0	-	-	1.1	1.4	7.9	-	-	1.6	1.3
Single-Unit Trucks	4	9	0	-	13	10	67	0	-	77	65	1	0	-	66	156
% Single-Unit Trucks	7.1	1.2	-	-	1.6	1.3	2.7	-	-	2.3	2.6	1.3	-	-	2.6	2.3
Articulated Trucks	0	2	0	-	2	2	80	0	-	82	52	0	0	-	52	136
% Articulated Trucks	0.0	0.3	-	-	0.2	0.3	3.2	-	-	2.5	2.1	0.0	-	-	2.0	2.0
Bicycles on Road	0	1	0	-	1	0	0	0	-	0	0	0	0	-	0	1
% Bicycles on Road	0.0	0.1	-	-	0.1	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	4	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	-

Count Name: Highway 6 & Sideroad 18
Site Code: 230599
Start Date: 02/07/2024
Page No: 3

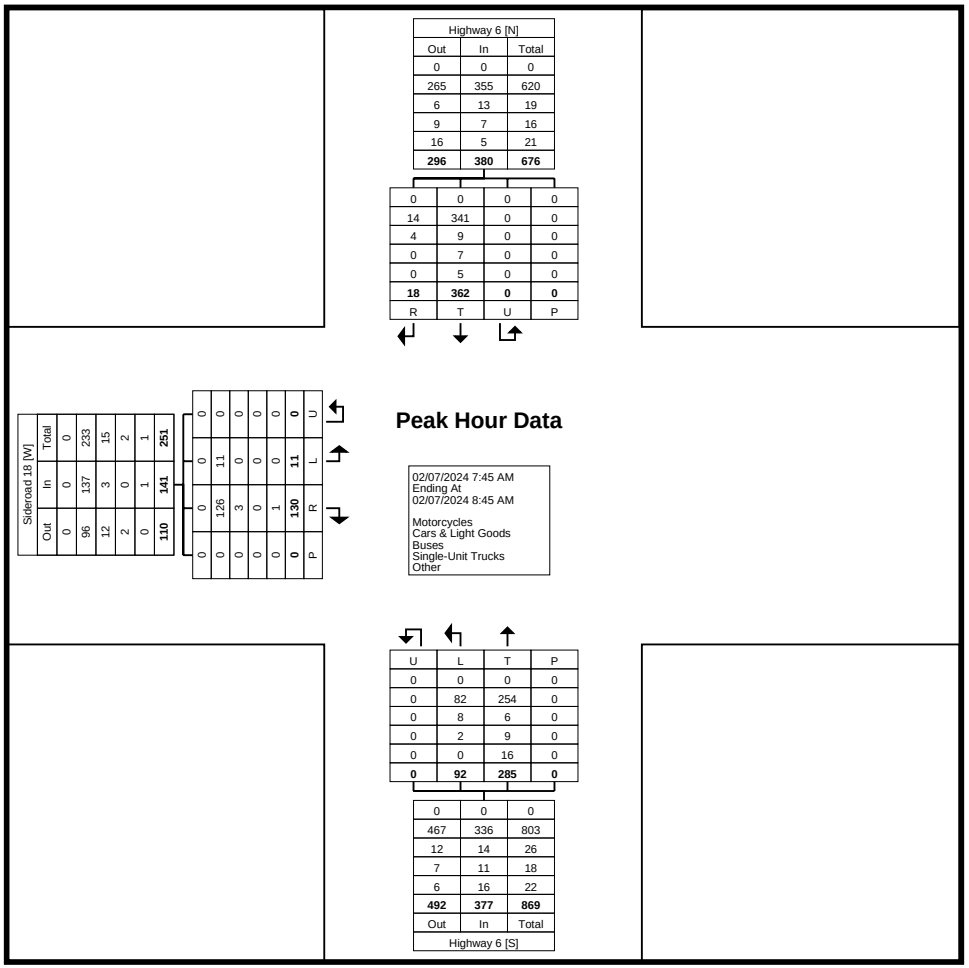


Turning Movement Data Plot

Turning Movement Peak Hour Data (7:45 AM)

Count Name: Highway 6 & Sideroad 18
Site Code: 230599
Start Date: 02/07/2024

Start Time	Sideroad 18 Eastbound					Highway 6 Northbound					Highway 6 Southbound					
	Left	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Int. Total
7:45 AM	2	28	0	0	30	24	77	0	0	101	95	4	0	0	99	230
8:00 AM	1	23	0	0	24	23	86	0	0	109	84	3	0	0	87	220
8:15 AM	6	37	0	0	43	24	64	0	0	88	96	7	0	0	103	234
8:30 AM	2	42	0	0	44	21	58	0	0	79	87	4	0	0	91	214
Total	11	130	0	0	141	92	285	0	0	377	362	18	0	0	380	898
Approach %	7.8	92.2	0.0	-	-	24.4	75.6	0.0	-	-	95.3	4.7	0.0	-	-	-
Total %	1.2	14.5	0.0	-	15.7	10.2	31.7	0.0	-	42.0	40.3	2.0	0.0	-	42.3	-
PHF	0.458	0.774	0.000	-	0.801	0.958	0.828	0.000	-	0.865	0.943	0.643	0.000	-	0.922	0.959
Motorcycles	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Motorcycles	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0
Cars & Light Goods	11	126	0	-	137	82	254	0	-	336	341	14	0	-	355	828
% Cars & Light Goods	100.0	96.9	-	-	97.2	89.1	89.1	-	-	89.1	94.2	77.8	-	-	93.4	92.2
Buses	0	3	0	-	3	8	6	0	-	14	9	4	0	-	13	30
% Buses	0.0	2.3	-	-	2.1	8.7	2.1	-	-	3.7	2.5	22.2	-	-	3.4	3.3
Single-Unit Trucks	0	0	0	-	0	2	9	0	-	11	7	0	0	-	7	18
% Single-Unit Trucks	0.0	0.0	-	-	0.0	2.2	3.2	-	-	2.9	1.9	0.0	-	-	1.8	2.0
Articulated Trucks	0	1	0	-	1	0	16	0	-	16	5	0	0	-	5	22
% Articulated Trucks	0.0	0.8	-	-	0.7	0.0	5.6	-	-	4.2	1.4	0.0	-	-	1.3	2.4
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

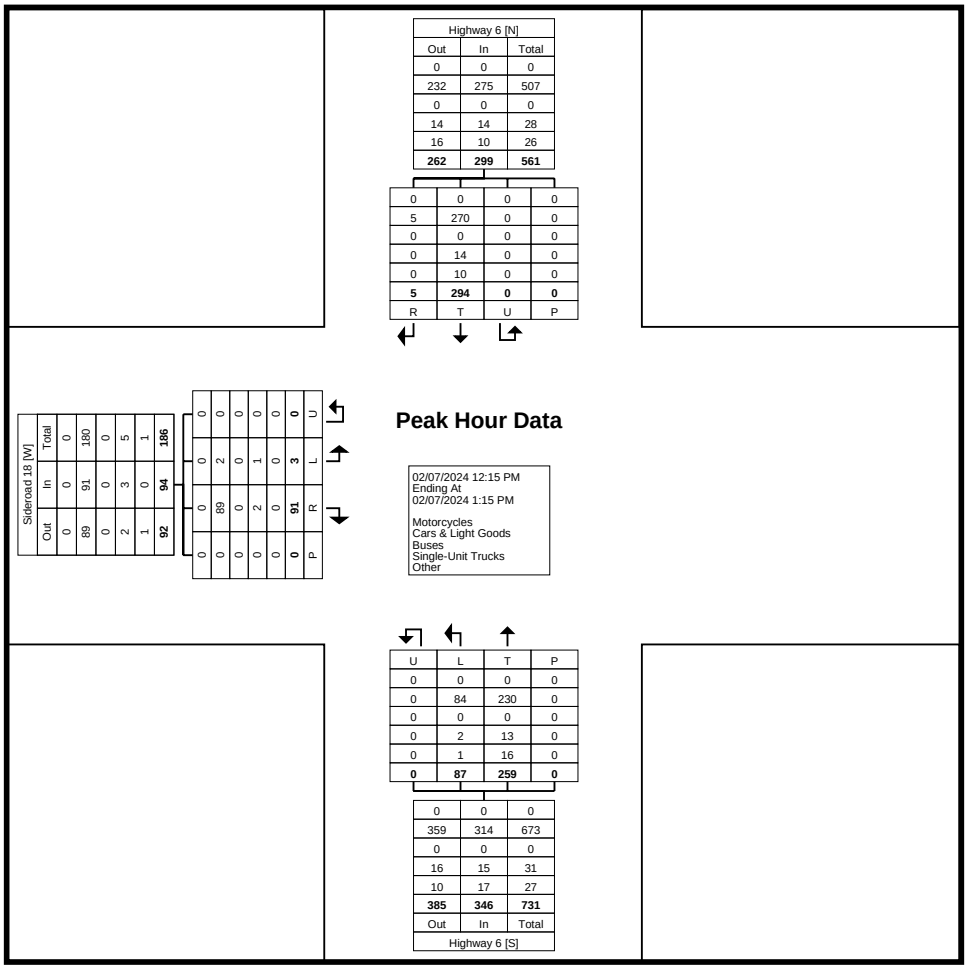


Turning Movement Peak Hour Data Plot (7:45 AM)

Turning Movement Peak Hour Data (12:15 PM)

Count Name: Highway 6 & Sideroad 18
Site Code: 230599
Start Date: 02/07/2024

Start Time	Sideroad 18 Eastbound					Highway 6 Northbound					Highway 6 Southbound					
	Left	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Int. Total
12:15 PM	0	25	0	0	25	24	60	0	0	84	61	1	0	0	62	171
12:30 PM	0	29	0	0	29	22	76	0	0	98	75	1	0	0	76	203
12:45 PM	2	26	0	0	28	23	61	0	0	84	85	2	0	0	87	199
1:00 PM	1	11	0	0	12	18	62	0	0	80	73	1	0	0	74	166
Total	3	91	0	0	94	87	259	0	0	346	294	5	0	0	299	739
Approach %	3.2	96.8	0.0	-	-	25.1	74.9	0.0	-	-	98.3	1.7	0.0	-	-	-
Total %	0.4	12.3	0.0	-	12.7	11.8	35.0	0.0	-	46.8	39.8	0.7	0.0	-	40.5	-
PHF	0.375	0.784	0.000	-	0.810	0.906	0.852	0.000	-	0.883	0.865	0.625	0.000	-	0.859	0.910
Motorcycles	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Motorcycles	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0
Cars & Light Goods	2	89	0	-	91	84	230	0	-	314	270	5	0	-	275	680
% Cars & Light Goods	66.7	97.8	-	-	96.8	96.6	88.8	-	-	90.8	91.8	100.0	-	-	92.0	92.0
Buses	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Buses	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0
Single-Unit Trucks	1	2	0	-	3	2	13	0	-	15	14	0	0	-	14	32
% Single-Unit Trucks	33.3	2.2	-	-	3.2	2.3	5.0	-	-	4.3	4.8	0.0	-	-	4.7	4.3
Articulated Trucks	0	0	0	-	0	1	16	0	-	17	10	0	0	-	10	27
% Articulated Trucks	0.0	0.0	-	-	0.0	1.1	6.2	-	-	4.9	3.4	0.0	-	-	3.3	3.7
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

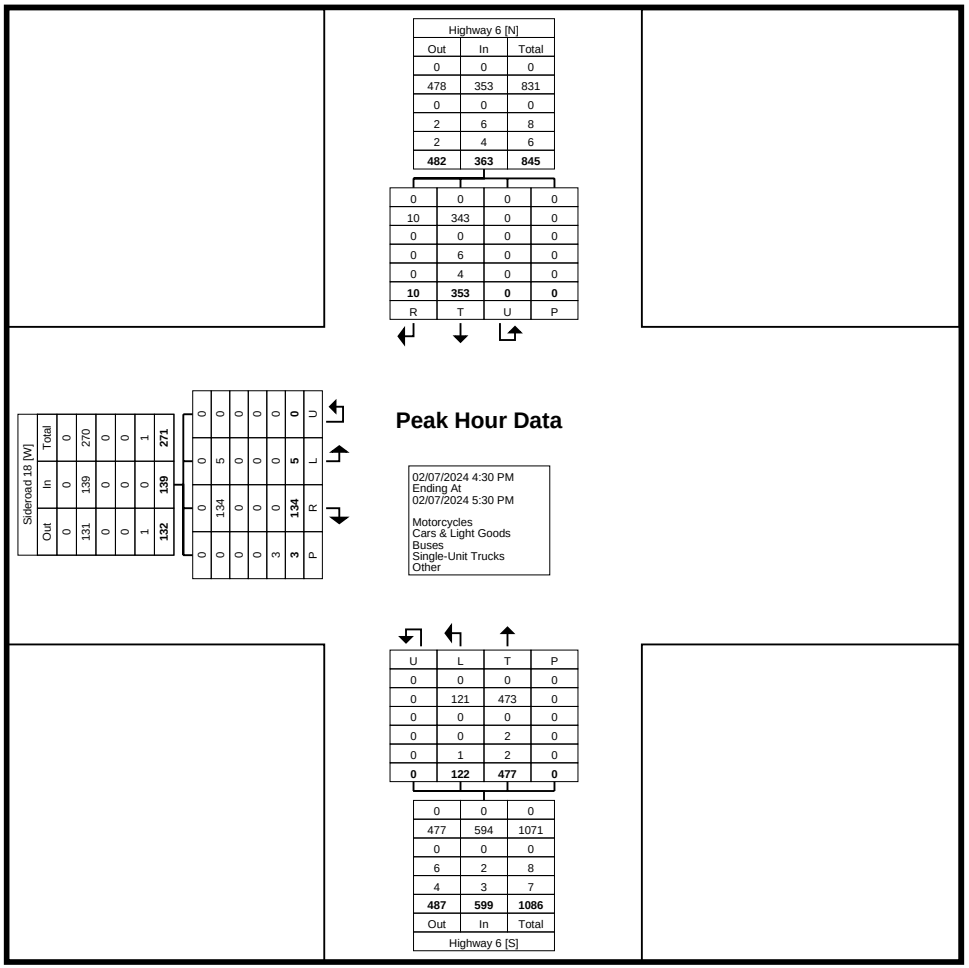


Turning Movement Peak Hour Data Plot (12:15 PM)

Turning Movement Peak Hour Data (4:30 PM)

Count Name: Highway 6 & Sideroad 18
Site Code: 230599
Start Date: 02/07/2024

Start Time	Sideroad 18 Eastbound					Highway 6 Northbound					Highway 6 Southbound					
	Left	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Int. Total
4:30 PM	3	38	0	0	41	28	137	0	0	165	73	3	0	0	76	282
4:45 PM	0	36	0	0	36	36	101	0	0	137	99	3	0	0	102	275
5:00 PM	1	34	0	0	35	30	123	0	0	153	98	2	0	0	100	288
5:15 PM	1	26	0	3	27	28	116	0	0	144	83	2	0	0	85	256
Total	5	134	0	3	139	122	477	0	0	599	353	10	0	0	363	1101
Approach %	3.6	96.4	0.0	-	-	20.4	79.6	0.0	-	-	97.2	2.8	0.0	-	-	-
Total %	0.5	12.2	0.0	-	12.6	11.1	43.3	0.0	-	54.4	32.1	0.9	0.0	-	33.0	-
PHF	0.417	0.882	0.000	-	0.848	0.847	0.870	0.000	-	0.908	0.891	0.833	0.000	-	0.890	0.956
Motorcycles	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Motorcycles	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0
Cars & Light Goods	5	134	0	-	139	121	473	0	-	594	343	10	0	-	353	1086
% Cars & Light Goods	100.0	100.0	-	-	100.0	99.2	99.2	-	-	99.2	97.2	100.0	-	-	97.2	98.6
Buses	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Buses	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0
Single-Unit Trucks	0	0	0	-	0	0	2	0	-	2	6	0	0	-	6	8
% Single-Unit Trucks	0.0	0.0	-	-	0.0	0.0	0.4	-	-	0.3	1.7	0.0	-	-	1.7	0.7
Articulated Trucks	0	0	0	-	0	1	2	0	-	3	4	0	0	-	4	7
% Articulated Trucks	0.0	0.0	-	-	0.0	0.8	0.4	-	-	0.5	1.1	0.0	-	-	1.1	0.6
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	3	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	-



Turning Movement Peak Hour Data Plot (4:30 PM)

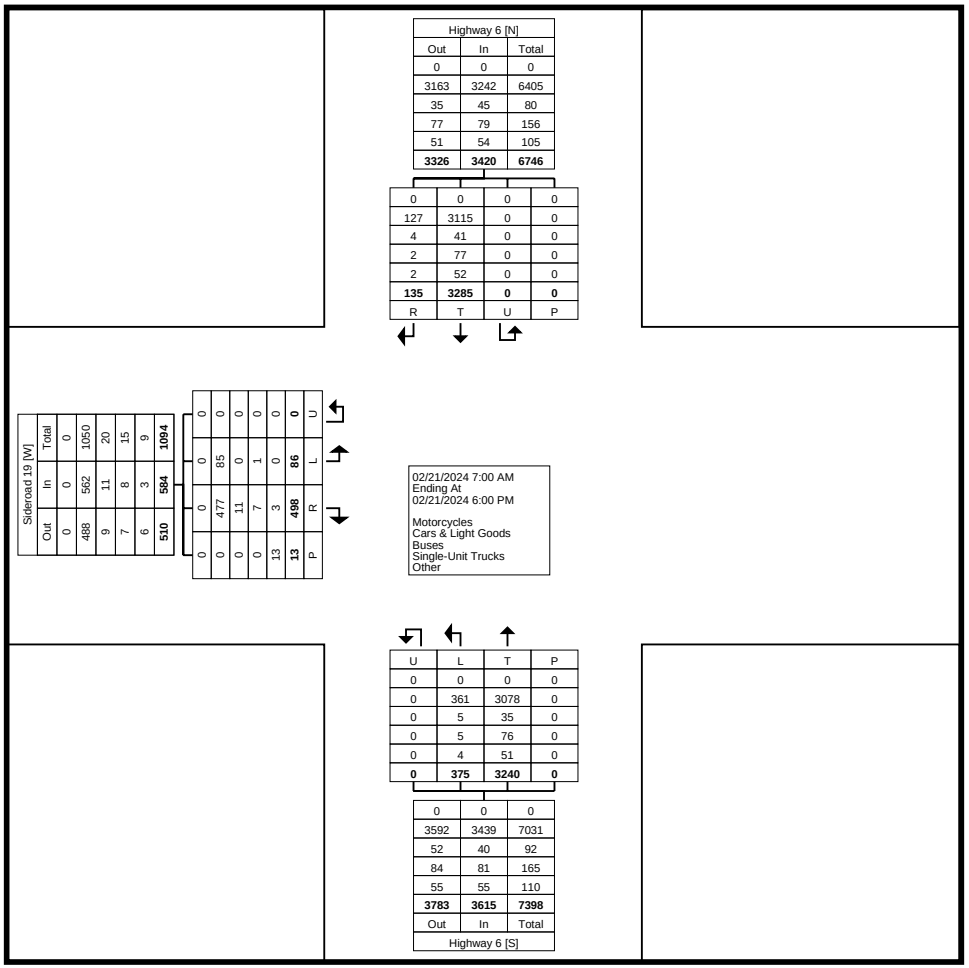
Turning Movement Data

Count Name: Highway 6 & Sideroad 19
Site Code: 230599
Start Date: 02/21/2024

Start Time	Sideroad 19 Eastbound					Highway 6 Northbound					Highway 6 Southbound					
	Left	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Int. Total
7:00 AM	1	7	0	0	8	8	59	0	0	67	84	3	0	0	87	162
7:15 AM	3	8	0	1	11	4	83	0	0	87	103	5	0	0	108	206
7:30 AM	2	11	0	0	13	1	90	0	0	91	132	2	0	0	134	238
7:45 AM	1	9	0	0	10	6	110	0	0	116	104	1	0	0	105	231
Hourly Total	7	35	0	1	42	19	342	0	0	361	423	11	0	0	434	837
8:00 AM	0	11	0	0	11	4	86	0	0	90	100	7	0	0	107	208
8:15 AM	4	11	0	0	15	10	79	0	0	89	124	5	0	0	129	233
8:30 AM	1	18	0	0	19	6	62	0	0	68	116	4	0	0	120	207
8:45 AM	1	11	0	3	12	11	71	0	0	82	123	1	0	0	124	218
Hourly Total	6	51	0	3	57	31	298	0	0	329	463	17	0	0	480	866
9:00 AM	1	10	0	0	11	9	104	0	0	113	100	3	0	0	103	227
9:15 AM	0	11	0	0	11	10	76	0	0	86	76	2	0	0	78	175
9:30 AM	3	9	0	0	12	8	66	0	0	74	86	3	0	0	89	175
9:45 AM	1	20	0	0	21	12	76	0	0	88	88	1	0	0	89	198
Hourly Total	5	50	0	0	55	39	322	0	0	361	350	9	0	0	359	775
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:30 AM	3	14	0	1	17	13	68	0	0	81	78	5	0	0	83	181
11:45 AM	1	11	0	1	12	10	73	0	0	83	88	7	0	0	95	190
Hourly Total	4	25	0	2	29	23	141	0	0	164	166	12	0	0	178	371
12:00 PM	3	22	0	0	25	10	105	0	0	115	97	4	0	0	101	241
12:15 PM	3	17	0	3	20	8	90	0	0	98	66	2	0	0	68	186
12:30 PM	6	19	0	0	25	13	77	0	0	90	85	4	0	0	89	204
12:45 PM	0	13	0	1	13	11	84	0	0	95	88	5	0	0	93	201
Hourly Total	12	71	0	4	83	42	356	0	0	398	336	15	0	0	351	832
1:00 PM	4	16	0	0	20	11	93	0	0	104	91	3	0	0	94	218
1:15 PM	5	20	0	0	25	8	93	0	0	101	80	5	0	0	85	211
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hourly Total	9	36	0	0	45	19	186	0	0	205	171	8	0	0	179	429
3:00 PM	3	20	0	1	23	12	100	0	0	112	83	3	0	0	86	221
3:15 PM	3	17	0	1	20	22	124	0	0	146	101	6	0	0	107	273
3:30 PM	3	13	0	0	16	18	141	0	0	159	124	10	0	0	134	309
3:45 PM	4	26	0	1	30	18	118	0	0	136	123	8	0	0	131	297
Hourly Total	13	76	0	3	89	70	483	0	0	553	431	27	0	0	458	1100
4:00 PM	5	15	0	0	20	17	147	0	0	164	101	6	0	0	107	291
4:15 PM	5	18	0	0	23	11	136	0	0	147	115	6	0	0	121	291
4:30 PM	1	20	0	0	21	19	140	0	0	159	101	6	0	0	107	287

4:45 PM	4	28	0	0	32	18	146	0	0	164	129	5	0	0	134	330
Hourly Total	15	81	0	0	96	65	569	0	0	634	446	23	0	0	469	1199
5:00 PM	4	15	0	0	19	18	170	0	0	188	140	3	0	0	143	350
5:15 PM	4	12	0	0	16	16	129	0	0	145	137	5	0	0	142	303
5:30 PM	4	23	0	0	27	18	130	0	0	148	125	2	0	0	127	302
5:45 PM	3	23	0	0	26	15	114	0	0	129	97	3	0	0	100	255
Hourly Total	15	73	0	0	88	67	543	0	0	610	499	13	0	0	512	1210
Grand Total	86	498	0	13	584	375	3240	0	0	3615	3285	135	0	0	3420	7619
Approach %	14.7	85.3	0.0	-	-	10.4	89.6	0.0	-	-	96.1	3.9	0.0	-	-	-
Total %	1.1	6.5	0.0	-	7.7	4.9	42.5	0.0	-	47.4	43.1	1.8	0.0	-	44.9	-
Motorcycles	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Motorcycles	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0
Cars & Light Goods	85	477	0	-	562	361	3078	0	-	3439	3115	127	0	-	3242	7243
% Cars & Light Goods	98.8	95.8	-	-	96.2	96.3	95.0	-	-	95.1	94.8	94.1	-	-	94.8	95.1
Buses	0	11	0	-	11	5	35	0	-	40	41	4	0	-	45	96
% Buses	0.0	2.2	-	-	1.9	1.3	1.1	-	-	1.1	1.2	3.0	-	-	1.3	1.3
Single-Unit Trucks	1	7	0	-	8	5	76	0	-	81	77	2	0	-	79	168
% Single-Unit Trucks	1.2	1.4	-	-	1.4	1.3	2.3	-	-	2.2	2.3	1.5	-	-	2.3	2.2
Articulated Trucks	0	3	0	-	3	4	50	0	-	54	52	1	0	-	53	110
% Articulated Trucks	0.0	0.6	-	-	0.5	1.1	1.5	-	-	1.5	1.6	0.7	-	-	1.5	1.4
Bicycles on Road	0	0	0	-	0	0	1	0	-	1	0	1	0	-	1	2
% Bicycles on Road	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.7	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	1	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	7.7	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	12	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	92.3	-	-	-	-	-	-	-	-	-	-	-	-

Count Name: Highway 6 & Sideroad 19
Site Code: 230599
Start Date: 02/21/2024
Page No: 3

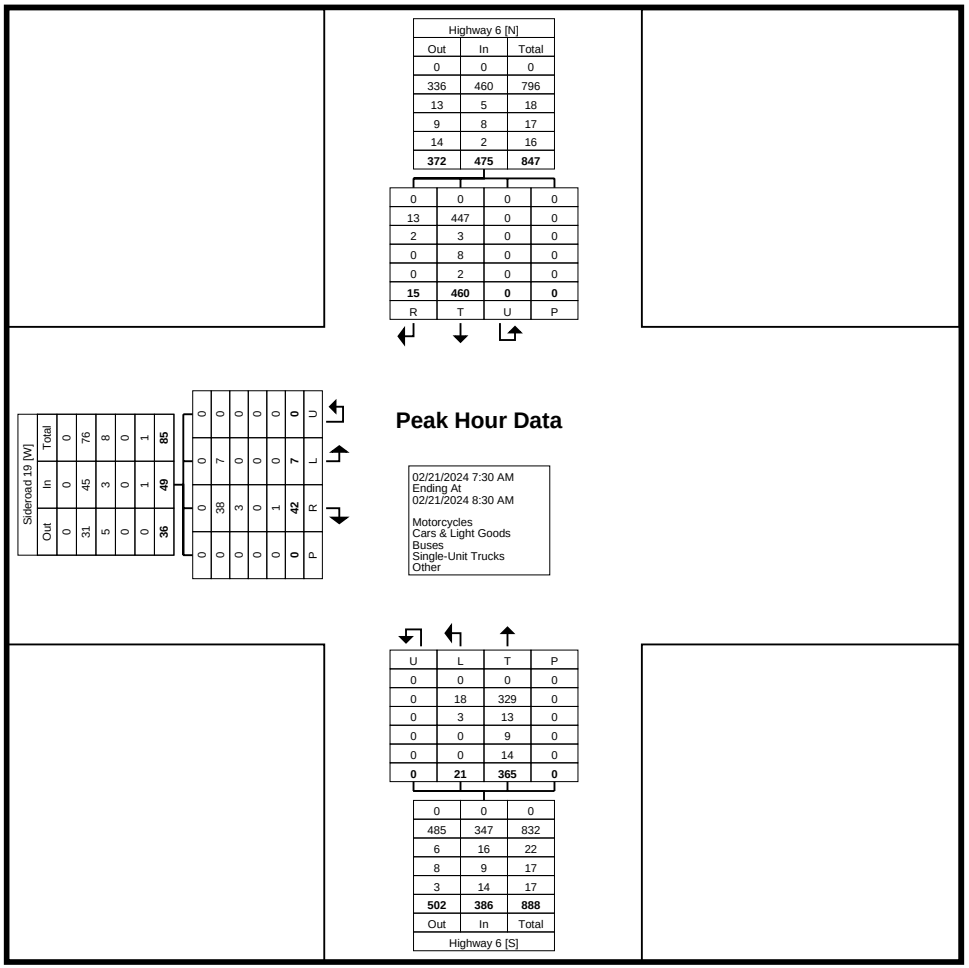


Turning Movement Data Plot

Turning Movement Peak Hour Data (7:30 AM)

Count Name: Highway 6 & Sideroad 19
Site Code: 230599
Start Date: 02/21/2024

Start Time	Sideroad 19 Eastbound					Highway 6 Northbound					Highway 6 Southbound					
	Left	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Int. Total
7:30 AM	2	11	0	0	13	1	90	0	0	91	132	2	0	0	134	238
7:45 AM	1	9	0	0	10	6	110	0	0	116	104	1	0	0	105	231
8:00 AM	0	11	0	0	11	4	86	0	0	90	100	7	0	0	107	208
8:15 AM	4	11	0	0	15	10	79	0	0	89	124	5	0	0	129	233
Total	7	42	0	0	49	21	365	0	0	386	460	15	0	0	475	910
Approach %	14.3	85.7	0.0	-	-	5.4	94.6	0.0	-	-	96.8	3.2	0.0	-	-	-
Total %	0.8	4.6	0.0	-	5.4	2.3	40.1	0.0	-	42.4	50.5	1.6	0.0	-	52.2	-
PHF	0.438	0.955	0.000	-	0.817	0.525	0.830	0.000	-	0.832	0.871	0.536	0.000	-	0.886	0.956
Motorcycles	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Motorcycles	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0
Cars & Light Goods	7	38	0	-	45	18	329	0	-	347	447	13	0	-	460	852
% Cars & Light Goods	100.0	90.5	-	-	91.8	85.7	90.1	-	-	89.9	97.2	86.7	-	-	96.8	93.6
Buses	0	3	0	-	3	3	13	0	-	16	3	2	0	-	5	24
% Buses	0.0	7.1	-	-	6.1	14.3	3.6	-	-	4.1	0.7	13.3	-	-	1.1	2.6
Single-Unit Trucks	0	0	0	-	0	0	9	0	-	9	8	0	0	-	8	17
% Single-Unit Trucks	0.0	0.0	-	-	0.0	0.0	2.5	-	-	2.3	1.7	0.0	-	-	1.7	1.9
Articulated Trucks	0	1	0	-	1	0	14	0	-	14	2	0	0	-	2	17
% Articulated Trucks	0.0	2.4	-	-	2.0	0.0	3.8	-	-	3.6	0.4	0.0	-	-	0.4	1.9
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

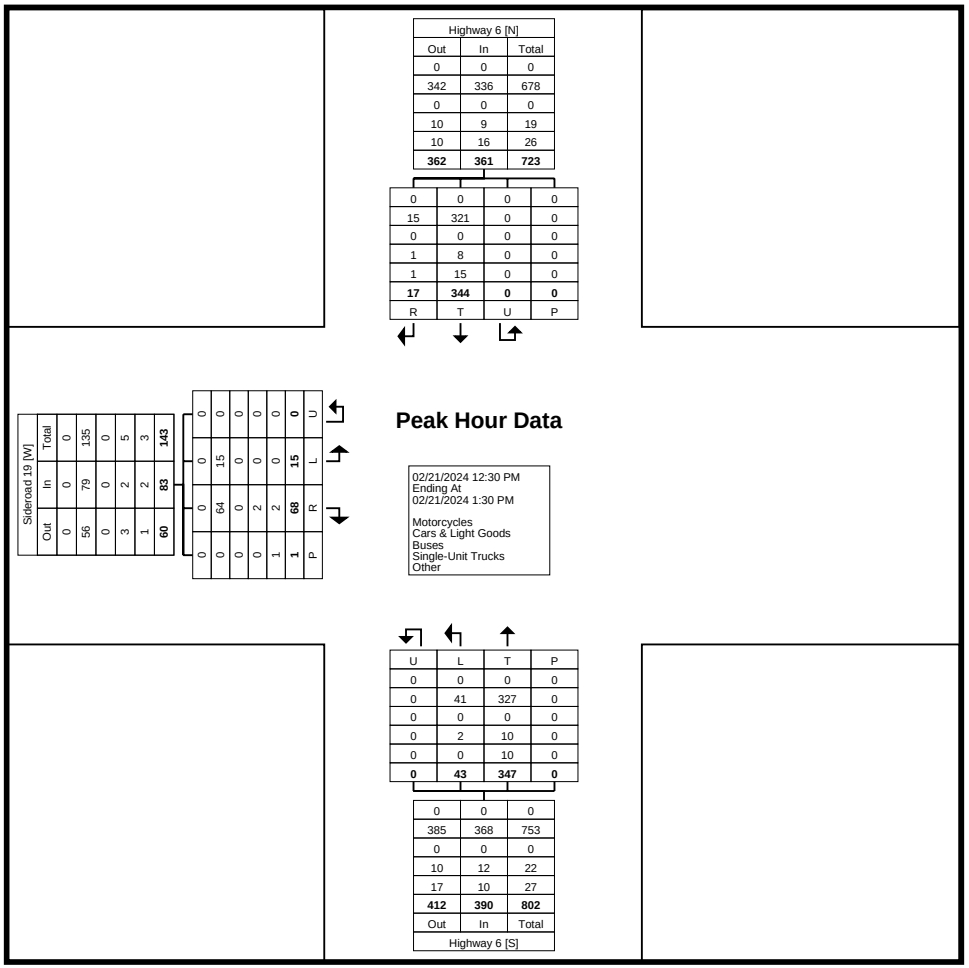


Turning Movement Peak Hour Data Plot (7:30 AM)

Turning Movement Peak Hour Data (12:30 PM)

Count Name: Highway 6 & Sideroad 19
Site Code: 230599
Start Date: 02/21/2024

Start Time	Sideroad 19 Eastbound					Highway 6 Northbound					Highway 6 Southbound					
	Left	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Int. Total
12:30 PM	6	19	0	0	25	13	77	0	0	90	85	4	0	0	89	204
12:45 PM	0	13	0	1	13	11	84	0	0	95	88	5	0	0	93	201
1:00 PM	4	16	0	0	20	11	93	0	0	104	91	3	0	0	94	218
1:15 PM	5	20	0	0	25	8	93	0	0	101	80	5	0	0	85	211
Total	15	68	0	1	83	43	347	0	0	390	344	17	0	0	361	834
Approach %	18.1	81.9	0.0	-	-	11.0	89.0	0.0	-	-	95.3	4.7	0.0	-	-	-
Total %	1.8	8.2	0.0	-	10.0	5.2	41.6	0.0	-	46.8	41.2	2.0	0.0	-	43.3	-
PHF	0.625	0.850	0.000	-	0.830	0.827	0.933	0.000	-	0.938	0.945	0.850	0.000	-	0.960	0.956
Motorcycles	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Motorcycles	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0
Cars & Light Goods	15	64	0	-	79	41	327	0	-	368	321	15	0	-	336	783
% Cars & Light Goods	100.0	94.1	-	-	95.2	95.3	94.2	-	-	94.4	93.3	88.2	-	-	93.1	93.9
Buses	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Buses	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0
Single-Unit Trucks	0	2	0	-	2	2	10	0	-	12	8	1	0	-	9	23
% Single-Unit Trucks	0.0	2.9	-	-	2.4	4.7	2.9	-	-	3.1	2.3	5.9	-	-	2.5	2.8
Articulated Trucks	0	2	0	-	2	0	10	0	-	10	15	0	0	-	15	27
% Articulated Trucks	0.0	2.9	-	-	2.4	0.0	2.9	-	-	2.6	4.4	0.0	-	-	4.2	3.2
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	0	1	0	-	1	1
% Bicycles on Road	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	5.9	-	-	0.3	0.1
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	1	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	-

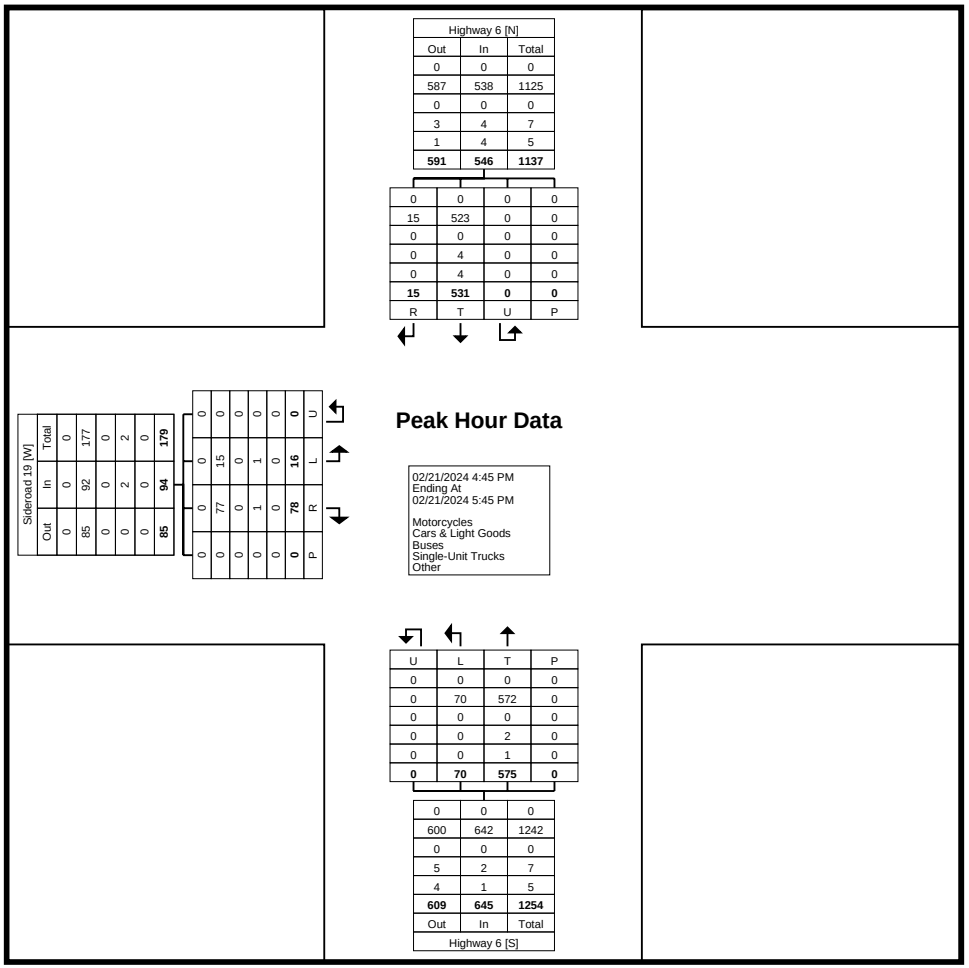


Turning Movement Peak Hour Data Plot (12:30 PM)

Count Name: Highway 6 & Sideroad 19
Site Code: 230599
Start Date: 02/21/2024

Turning Movement Peak Hour Data (4:45 PM)

Start Time	Sideroad 19 Eastbound					Highway 6 Northbound					Highway 6 Southbound					
	Left	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Int. Total
4:45 PM	4	28	0	0	32	18	146	0	0	164	129	5	0	0	134	330
5:00 PM	4	15	0	0	19	18	170	0	0	188	140	3	0	0	143	350
5:15 PM	4	12	0	0	16	16	129	0	0	145	137	5	0	0	142	303
5:30 PM	4	23	0	0	27	18	130	0	0	148	125	2	0	0	127	302
Total	16	78	0	0	94	70	575	0	0	645	531	15	0	0	546	1285
Approach %	17.0	83.0	0.0	-	-	10.9	89.1	0.0	-	-	97.3	2.7	0.0	-	-	-
Total %	1.2	6.1	0.0	-	7.3	5.4	44.7	0.0	-	50.2	41.3	1.2	0.0	-	42.5	-
PHF	1.000	0.696	0.000	-	0.734	0.972	0.846	0.000	-	0.858	0.948	0.750	0.000	-	0.955	0.918
Motorcycles	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Motorcycles	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0
Cars & Light Goods	15	77	0	-	92	70	572	0	-	642	523	15	0	-	538	1272
% Cars & Light Goods	93.8	98.7	-	-	97.9	100.0	99.5	-	-	99.5	98.5	100.0	-	-	98.5	99.0
Buses	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Buses	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0
Single-Unit Trucks	1	1	0	-	2	0	2	0	-	2	4	0	0	-	4	8
% Single-Unit Trucks	6.3	1.3	-	-	2.1	0.0	0.3	-	-	0.3	0.8	0.0	-	-	0.7	0.6
Articulated Trucks	0	0	0	-	0	0	1	0	-	1	4	0	0	-	4	5
% Articulated Trucks	0.0	0.0	-	-	0.0	0.0	0.2	-	-	0.2	0.8	0.0	-	-	0.7	0.4
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Turning Movement Peak Hour Data Plot (4:45 PM)

Appendix C

Base Year Operation Synchro Reports

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	21	92	96	208	298	23
Future Volume (vph)	21	92	96	208	298	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	115.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		100.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.890				0.990	
Flt Protected	0.991		0.950			
Satd. Flow (prot)	1598	0	1770	1667	1809	0
Flt Permitted	0.991		0.950			
Satd. Flow (perm)	1598	0	1770	1667	1809	0
Link Speed (k/h)	80			80	80	
Link Distance (m)	1005.9			726.4	1036.6	
Travel Time (s)	45.3			32.7	46.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	6%	2%	14%	4%	4%
Adj. Flow (vph)	23	100	104	226	324	25
Shared Lane Traffic (%)						
Lane Group Flow (vph)	123	0	104	226	349	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	39.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	21	92	96	208	298	23
Future Volume (Veh/h)	21	92	96	208	298	23
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	23	100	104	226	324	25
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	770	336	349			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	770	336	349			
tC, single (s)	6.4	6.3	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.4	2.2			
p0 queue free %	93	86	91			
cM capacity (veh/h)	340	696	1210			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	123	104	226	349
Volume Left	23	104	0	0
Volume Right	100	0	0	25
cSH	582	1210	1700	1700
Volume to Capacity	0.21	0.09	0.13	0.21
Queue Length 95th (m)	6.3	2.3	0.0	0.0
Control Delay (s)	12.8	8.3	0.0	0.0
Lane LOS	B	A		
Approach Delay (s)	12.8	2.6		0.0
Approach LOS	B			

Intersection Summary			
Average Delay	3.0		
Intersection Capacity Utilization	39.2%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	11	134	95	293	372	18
Future Volume (vph)	11	134	95	293	372	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	110.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		75.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.875				0.994	
Flt Protected	0.996		0.950			
Satd. Flow (prot)	1611	0	1626	1712	1769	0
Flt Permitted	0.996		0.950			
Satd. Flow (perm)	1611	0	1626	1712	1769	0
Link Speed (k/h)	50			60	60	
Link Distance (m)	1004.3			419.5	285.9	
Travel Time (s)	72.3			25.2	17.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	3%	11%	11%	6%	22%
Adj. Flow (vph)	12	146	103	318	404	20
Shared Lane Traffic (%)						
Lane Group Flow (vph)	158	0	103	318	424	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	44.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	11	134	95	293	372	18
Future Volume (Veh/h)	11	134	95	293	372	18
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	12	146	103	318	404	20
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	938	414	424			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	938	414	424			
tC, single (s)	6.4	6.2	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.3			
p0 queue free %	96	77	91			
cM capacity (veh/h)	268	636	1089			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	158	103	318	424
Volume Left	12	103	0	0
Volume Right	146	0	0	20
cSH	576	1089	1700	1700
Volume to Capacity	0.27	0.09	0.19	0.25
Queue Length 95th (m)	8.9	2.5	0.0	0.0
Control Delay (s)	13.6	8.7	0.0	0.0
Lane LOS	B	A		
Approach Delay (s)	13.6	2.1		0.0
Approach LOS	B			

Intersection Summary				
Average Delay		3.0		
Intersection Capacity Utilization		44.8%	ICU Level of Service	A
Analysis Period (min)		15		

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	7	45	22	381	491	15
Future Volume (vph)	7	45	22	381	491	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	20.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		15.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.884				0.996	
Flt Protected	0.993		0.950			
Satd. Flow (prot)	1536	0	1583	1727	1832	0
Flt Permitted	0.993		0.950			
Satd. Flow (perm)	1536	0	1583	1727	1832	0
Link Speed (k/h)	50			50	60	
Link Distance (m)	1002.3			98.3	419.5	
Travel Time (s)	72.2			7.1	25.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	10%	14%	10%	3%	13%
Adj. Flow (vph)	8	49	24	414	534	16
Shared Lane Traffic (%)						
Lane Group Flow (vph)	57	0	24	414	550	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 36.8%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	7	45	22	381	491	15
Future Volume (Veh/h)	7	45	22	381	491	15
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	8	49	24	414	534	16
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				98		
pX, platoon unblocked	0.90					
vC, conflicting volume	1004	542	550			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	950	542	550			
tC, single (s)	6.4	6.3	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.4	2.3			
p0 queue free %	97	91	98			
cM capacity (veh/h)	256	525	962			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	57	24	414	550
Volume Left	8	24	0	0
Volume Right	49	0	0	16
cSH	458	962	1700	1700
Volume to Capacity	0.12	0.02	0.24	0.32
Queue Length 95th (m)	3.4	0.6	0.0	0.0
Control Delay (s)	14.0	8.8	0.0	0.0
Lane LOS	B	A		
Approach Delay (s)	14.0	0.5		0.0
Approach LOS	B			

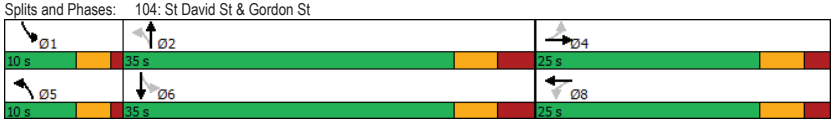
Intersection Summary				
Average Delay		1.0		
Intersection Capacity Utilization		36.8%	ICU Level of Service	A
Analysis Period (min)		15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	8	14	68	5	144	23	258	60	159	370	7
Future Volume (vph)	1	8	14	68	5	144	23	258	60	159	370	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0		0.0	25.0		0.0	20.0		0.0	25.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	20.0			70.0			60.0			15.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.98		0.99			1.00	1.00		1.00	1.00	
Frt		0.906			0.855			0.972			0.997	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1694	0	1787	1418	0	1736	1705	0	1612	1822	0
Flt Permitted	0.654			0.742			0.502			0.529		
Satd. Flow (perm)	1243	1694	0	1388	1418	0	915	1705	0	896	1822	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		15			157			20			2	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		119.1			1012.2			564.4			98.3	
Travel Time (s)		8.6			72.9			40.6			7.1	
Confl. Peds. (#/hr)			3	3			6		3	3		6
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	1%	0%	15%	4%	9%	3%	12%	4%	0%
Adj. Flow (vph)	1	9	15	74	5	157	25	280	65	173	402	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	1	24	0	74	162	0	25	345	0	173	410	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane								Yes				
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	1.0	1.0		1.0	1.0		1.0	5.0		1.0	5.0	
Minimum Split (s)	25.0	25.0		25.0	25.0		5.0	35.0		5.0	35.0	
Total Split (s)	25.0	25.0		25.0	25.0		10.0	35.0		10.0	35.0	
Total Split (%)	35.7%	35.7%		35.7%	35.7%		14.3%	50.0%		14.3%	50.0%	
Maximum Green (s)	19.0	19.0		19.0	19.0		6.0	28.0		6.0	28.0	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.0	3.8		3.0	3.8	
All-Red Time (s)	2.3	2.3		2.3	2.3		1.0	3.2		1.0	3.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		4.0	7.0		4.0	7.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	5.0		2.0	5.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)	10.0	10.0		10.0	10.0			25.0			25.0	
Flash Dont Walk (s)	8.0	8.0		8.0	8.0			14.0			14.0	
Pedestrian Calls (#/hr)	0	0		0	0			0			0	
Act Effct Green (s)	8.4	8.4		8.4	8.4		25.6	17.1		27.2	17.9	
Actuated g/C Ratio	0.18	0.18		0.18	0.18		0.56	0.37		0.59	0.39	
v/c Ratio	0.00	0.07		0.29	0.42		0.04	0.54		0.28	0.58	
Control Delay	19.0	13.7		22.8	8.6		4.2	15.1		5.4	15.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	19.0	13.7		22.8	8.6		4.2	15.1		5.4	15.7	
LOS	B	B		C	A		A	B		A	B	
Approach Delay		13.9			13.0			14.4			12.7	
Approach LOS		B			B			B			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 46			
Natural Cycle: 65			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.58			
Intersection Signal Delay: 13.3		Intersection LOS: B	
Intersection Capacity Utilization 52.1%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 104: St David St & Gordon St



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	1	24	74	162	25	345	173	410
v/c Ratio	0.00	0.07	0.29	0.42	0.04	0.54	0.28	0.58
Control Delay	19.0	13.7	22.8	8.6	4.2	15.1	5.4	15.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.0	13.7	22.8	8.6	4.2	15.1	5.4	15.7
Queue Length 50th (m)	0.1	0.7	5.7	0.4	0.7	22.4	5.2	27.9
Queue Length 95th (m)	1.3	6.3	18.2	14.4	2.9	46.0	13.4	56.1
Internal Link Dist (m)		95.1		988.2		540.4		74.3
Turn Bay Length (m)	20.0		25.0		20.0		25.0	
Base Capacity (vph)	562	774	627	727	652	1110	642	1179
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.00	0.03	0.12	0.22	0.04	0.31	0.27	0.35

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	8	14	68	5	144	23	258	60	159	370	7
Future Volume (vph)	1	8	14	68	5	144	23	258	60	159	370	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		4.0	7.0		4.0	7.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.91		1.00	0.85		1.00	0.97		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	1696		1780	1418		1734	1705		1611	1822	
Flt Permitted	0.65	1.00		0.74	1.00		0.50	1.00		0.53	1.00	
Satd. Flow (perm)	1243	1696		1390	1418		917	1705		897	1822	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	9	15	74	5	157	25	280	65	173	402	8
RTOR Reduction (vph)	0	13	0	0	135	0	0	13	0	0	1	0
Lane Group Flow (vph)	1	11	0	74	27	0	25	332	0	173	409	0
Confl. Peds. (#/hr)			3	3			6		3	3		6
Heavy Vehicles (%)	0%	0%	0%	1%	0%	15%	4%	9%	3%	12%	4%	0%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	6.4	6.4		6.4	6.4		22.2	17.0		23.8	17.8	
Effective Green, g (s)	6.4	6.4		6.4	6.4		22.2	17.0		23.8	17.8	
Actuated g/C Ratio	0.14	0.14		0.14	0.14		0.48	0.37		0.51	0.38	
Clearance Time (s)	6.0	6.0		6.0	6.0		4.0	7.0		4.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	5.0		2.0	5.0	
Lane Grp Cap (vph)	171	233		191	195		530	624		552	698	
v/s Ratio Prot		0.01			0.02		0.01	0.19		c0.04	c0.22	
v/s Ratio Perm	0.00			c0.05			0.02			0.12		
v/c Ratio	0.01	0.05		0.39	0.14		0.05	0.53		0.31	0.59	
Uniform Delay, d1	17.3	17.4		18.2	17.6		6.4	11.6		6.2	11.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	0.1		1.3	0.3		0.0	1.6		0.1	1.9	
Delay (s)	17.3	17.4		19.5	17.9		6.4	13.2		6.3	13.3	
Level of Service	B	B		B	B		A	B		A	B	
Approach Delay (s)		17.4			18.4			12.7			11.2	
Approach LOS		B			B			B			B	

Intersection Summary				
HCM 2000 Control Delay	13.2	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.50			
Actuated Cycle Length (s)	46.4	Sum of lost time (s)	17.0	
Intersection Capacity Utilization	52.1%	ICU Level of Service	A	
Analysis Period (min)	15			

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	39	102	19	63	99	57	12	245	28	29	396	27
Future Volume (vph)	39	102	19	63	99	57	12	245	28	29	396	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	15.0		0.0	20.0		0.0	20.0		0.0	20.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	50.0			30.0			30.0			30.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	0.99		0.98	0.99		1.00	1.00		0.99	1.00	
Frt		0.976			0.945			0.985			0.991	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1754	0	1770	1738	0	1543	1674	0	1543	1825	0
Flt Permitted	0.650			0.673			0.458			0.579		
Satd. Flow (perm)	1206	1754	0	1233	1738	0	743	1674	0	934	1825	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		17			50			14			8	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		1030.9			1009.0			391.9			424.5	
Travel Time (s)		74.2			72.6			28.2			30.6	
Confl. Peds. (#/hr)	3		12	12		3	1		10	10		1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	6%	0%	2%	2%	3%	17%	12%	7%	17%	3%	4%
Adj. Flow (vph)	42	111	21	68	108	62	13	266	30	32	430	29
Shared Lane Traffic (%)												
Lane Group Flow (vph)	42	132	0	68	170	0	13	296	0	32	459	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	25.0	25.0		25.0	25.0		35.0	35.0		35.0	35.0	
Total Split (s)	25.0	25.0		25.0	25.0		35.0	35.0		35.0	35.0	
Total Split (%)	41.7%	41.7%		41.7%	41.7%		58.3%	58.3%		58.3%	58.3%	
Maximum Green (s)	19.0	19.0		19.0	19.0		30.0	30.0		30.0	30.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)	10.0	10.0		10.0	10.0		20.0	20.0		20.0	20.0	
Flash Dont Walk (s)	8.0	8.0		8.0	8.0		10.0	10.0		10.0	10.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	10.6	10.6		10.6	10.6		22.1	22.1		22.1	22.1	
Actuated g/C Ratio	0.27	0.27		0.27	0.27		0.56	0.56		0.56	0.56	
v/c Ratio	0.13	0.27		0.20	0.34		0.03	0.31		0.06	0.44	
Control Delay	13.8	13.1		14.6	11.8		6.8	8.0		7.0	9.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	13.8	13.1		14.6	11.8		6.8	8.0		7.0	9.3	
LOS	B	B		B	B		A	A		A	A	
Approach Delay		13.3			12.6			7.9			9.2	
Approach LOS		B			B			A			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 39.2			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.44			
Intersection Signal Delay: 10.1		Intersection LOS: B	
Intersection Capacity Utilization 51.2%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 105: St David St & Garafraxa St

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	42	132	68	170	13	296	32	459
v/c Ratio	0.13	0.27	0.20	0.34	0.03	0.31	0.06	0.44
Control Delay	13.8	13.1	14.6	11.8	6.8	8.0	7.0	9.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.8	13.1	14.6	11.8	6.8	8.0	7.0	9.3
Queue Length 50th (m)	2.1	5.9	3.5	6.2	0.5	11.3	1.1	20.0
Queue Length 95th (m)	9.3	20.0	13.3	22.1	2.8	29.5	5.0	48.4
Internal Link Dist (m)		1006.9		985.0		367.9		400.5
Turn Bay Length (m)	15.0		20.0		20.0		20.0	
Base Capacity (vph)	613	899	626	907	589	1331	741	1449
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.15	0.11	0.19	0.02	0.22	0.04	0.32

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	39	102	19	63	99	57	12	245	28	29	396	27
Future Volume (vph)	39	102	19	63	99	57	12	245	28	29	396	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		0.99	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.95		1.00	0.98		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1765	1756		1750	1740		1542	1674		1536	1824	
Flt Permitted	0.65	1.00		0.67	1.00		0.46	1.00		0.58	1.00	
Satd. Flow (perm)	1207	1756		1239	1740		743	1674		936	1824	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	42	111	21	68	108	62	13	266	30	32	430	29
RTOR Reduction (vph)	0	13	0	0	39	0	0	7	0	0	4	0
Lane Group Flow (vph)	42	119	0	68	131	0	13	289	0	32	455	0
Confl. Peds. (#/hr)	3		12	12		3	1		10	10		1
Heavy Vehicles (%)	2%	6%	0%	2%	2%	3%	17%	12%	7%	17%	3%	4%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	8.6	8.6		8.6	8.6		20.7	20.7		20.7	20.7	
Effective Green, g (s)	8.6	8.6		8.6	8.6		20.7	20.7		20.7	20.7	
Actuated g/C Ratio	0.21	0.21		0.21	0.21		0.51	0.51		0.51	0.51	
Clearance Time (s)	6.0	6.0		6.0	6.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)	257	374		264	371		381	859		480	936	
v/s Ratio Prot		0.07			c0.08			0.17			c0.25	
v/s Ratio Perm	0.03			0.05			0.02			0.03		
v/c Ratio	0.16	0.32		0.26	0.35		0.03	0.34		0.07	0.49	
Uniform Delay, d1	12.9	13.4		13.2	13.5		4.9	5.8		4.9	6.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.6	1.0		1.1	1.2		0.1	0.5		0.1	0.8	
Delay (s)	13.5	14.4		14.3	14.7		4.9	6.3		5.1	7.2	
Level of Service	B	B		B	B		A	A		A	A	
Approach Delay (s)		14.2			14.6			6.2			7.0	
Approach LOS		B			B			A			A	

Intersection Summary				
HCM 2000 Control Delay	9.3	HCM 2000 Level of Service	A	
HCM 2000 Volume to Capacity ratio	0.45			
Actuated Cycle Length (s)	40.3	Sum of lost time (s)	11.0	
Intersection Capacity Utilization	51.2%	ICU Level of Service	A	
Analysis Period (min)	15			

c Critical Lane Group

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	22	116	107	371	244	22
Future Volume (vph)	22	116	107	371	244	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	115.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		100.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.887				0.989	
Flt Protected	0.992		0.950			
Satd. Flow (prot)	1672	0	1805	1881	1813	0
Flt Permitted	0.992		0.950			
Satd. Flow (perm)	1672	0	1805	1881	1813	0
Link Speed (k/h)	80			80	80	
Link Distance (m)	1005.9			726.4	1036.6	
Travel Time (s)	45.3			32.7	46.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	1%	4%	0%
Adj. Flow (vph)	24	126	116	403	265	24
Shared Lane Traffic (%)						
Lane Group Flow (vph)	150	0	116	403	289	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	38.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	22	116	107	371	244	22
Future Volume (Veh/h)	22	116	107	371	244	22
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	24	126	116	403	265	24
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	912	277	289			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	912	277	289			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	91	84	91			
cM capacity (veh/h)	279	767	1284			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	150	116	403	289
Volume Left	24	116	0	0
Volume Right	126	0	0	24
cSH	599	1284	1700	1700
Volume to Capacity	0.25	0.09	0.24	0.17
Queue Length 95th (m)	7.9	2.4	0.0	0.0
Control Delay (s)	13.0	8.1	0.0	0.0
Lane LOS	B	A		
Approach Delay (s)	13.0	1.8		0.0
Approach LOS	B			

Intersection Summary				
Average Delay		3.0		
Intersection Capacity Utilization		38.5%	ICU Level of Service	A
Analysis Period (min)		15		

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	5	133	121	473	350	10
Future Volume (vph)	5	133	121	473	350	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	110.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		75.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.869				0.996	
Flt Protected	0.998		0.950			
Satd. Flow (prot)	1648	0	1787	1881	1839	0
Flt Permitted	0.998		0.950			
Satd. Flow (perm)	1648	0	1787	1881	1839	0
Link Speed (k/h)	50			60	60	
Link Distance (m)	1004.3			419.5	285.9	
Travel Time (s)	72.3			25.2	17.2	
Confl. Peds. (#/hr)			3			3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	1%	1%	3%	0%
Adj. Flow (vph)	5	145	132	514	380	11
Shared Lane Traffic (%)						
Lane Group Flow (vph)	150	0	132	514	391	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	44.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	5	133	121	473	350	10
Future Volume (Veh/h)	5	133	121	473	350	10
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	145	132	514	380	11
Pedestrians	3					
Lane Width (m)	3.6					
Walking Speed (m/s)	1.2					
Percent Blockage	0					
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1166	388	394			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1166	388	394			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	97	78	89			
cM capacity (veh/h)	191	662	1167			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	150	132	514	391
Volume Left	5	132	0	0
Volume Right	145	0	0	11
cSH	612	1167	1700	1700
Volume to Capacity	0.25	0.11	0.30	0.23
Queue Length 95th (m)	7.7	3.1	0.0	0.0
Control Delay (s)	12.8	8.5	0.0	0.0
Lane LOS	B	A		
Approach Delay (s)	12.8	1.7		0.0
Approach LOS	B			

Intersection Summary				
Average Delay		2.6		
Intersection Capacity Utilization		44.2%	ICU Level of Service	A
Analysis Period (min)		15		

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	16	63	70	578	432	51
Future Volume (vph)	16	63	70	578	432	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	20.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		15.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.892				0.986	
Flt Protected	0.990		0.950			
Satd. Flow (prot)	1516	0	1583	1720	1786	0
Flt Permitted	0.990		0.950			
Satd. Flow (perm)	1516	0	1583	1720	1786	0
Link Speed (k/h)	50			50	60	
Link Distance (m)	1002.3			98.3	419.5	
Travel Time (s)	72.2			7.1	25.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	10%	14%	10%	3%	13%
Bus Blockages (#/hr)	6	1	0	1	2	0
Adj. Flow (vph)	17	68	76	628	470	55
Shared Lane Traffic (%)						
Lane Group Flow (vph)	85	0	76	628	525	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.03	1.00	1.00	1.01	1.01	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	44.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	16	63	70	578	432	51
Future Volume (Veh/h)	16	63	70	578	432	51
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	17	68	76	628	470	55
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				98		
pX, platoon unblocked	0.80					
vC, conflicting volume	1278	498	525			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1221	498	525			
tC, single (s)	6.4	6.3	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.4	2.3			
p0 queue free %	88	88	92			
cM capacity (veh/h)	147	557	983			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	85	76	628	525
Volume Left	17	76	0	0
Volume Right	68	0	0	55
cSH	358	983	1700	1700
Volume to Capacity	0.24	0.08	0.37	0.31
Queue Length 95th (m)	7.3	2.0	0.0	0.0
Control Delay (s)	18.2	9.0	0.0	0.0
Lane LOS	C	A		
Approach Delay (s)	18.2	1.0		0.0
Approach LOS	C			

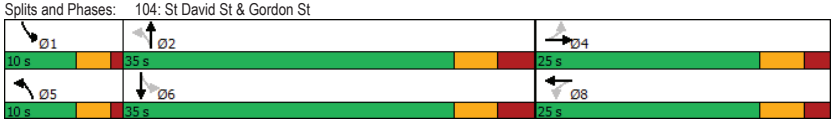
Intersection Summary				
Average Delay		1.7		
Intersection Capacity Utilization		44.5%	ICU Level of Service	A
Analysis Period (min)		15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	27	35	80	82	54	220	112	401	89	183	299	13
Future Volume (vph)	27	35	80	82	54	220	112	401	89	183	299	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0		0.0	25.0		0.0	20.0		0.0	25.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	20.0			70.0			60.0			15.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.98		0.99			1.00	1.00		1.00	1.00	
Frt		0.896			0.880			0.973			0.994	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1651	0	1736	1652	0	1805	1805	0	1736	1834	0
Flt Permitted	0.417			0.677			0.549			0.322		
Satd. Flow (perm)	792	1651	0	1223	1652	0	1041	1805	0	588	1834	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		87			239			19			4	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		119.1			1012.2			564.4			98.3	
Travel Time (s)		8.6			72.9			40.6			7.1	
Confl. Peds. (#/hr)			7	7			4		3	3		4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	1%	4%	2%	1%	0%	2%	2%	4%	3%	0%
Adj. Flow (vph)	29	38	87	89	59	239	122	436	97	199	325	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	29	125	0	89	298	0	122	533	0	199	339	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane								Yes				
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	1.0	1.0		1.0	1.0		1.0	5.0		1.0	5.0	
Minimum Split (s)	25.0	25.0		25.0	25.0		5.0	35.0		5.0	35.0	
Total Split (s)	25.0	25.0		25.0	25.0		10.0	35.0		10.0	35.0	
Total Split (%)	35.7%	35.7%		35.7%	35.7%		14.3%	50.0%		14.3%	50.0%	
Maximum Green (s)	19.0	19.0		19.0	19.0		6.0	28.0		6.0	28.0	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.0	3.8		3.0	3.8	
All-Red Time (s)	2.3	2.3		2.3	2.3		1.0	3.2		1.0	3.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		4.0	7.0		4.0	7.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	5.0		2.0	5.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)	10.0	10.0		10.0	10.0			25.0			25.0	
Flash Dont Walk (s)	8.0	8.0		8.0	8.0			14.0			14.0	
Pedestrian Calls (#/hr)	0	0		0	0			0			0	
Act Effct Green (s)	9.6	9.6		9.6	9.6		30.8	22.0		31.3	22.2	
Actuated g/C Ratio	0.17	0.17		0.17	0.17		0.56	0.40		0.57	0.40	
v/c Ratio	0.21	0.35		0.42	0.61		0.18	0.73		0.43	0.46	
Control Delay	24.9	12.1		28.0	12.2		5.2	20.4		7.8	14.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	24.9	12.1		28.0	12.2		5.2	20.4		7.8	14.5	
LOS	C	B		C	B		A	C		A	B	
Approach Delay		14.5			15.8			17.6			12.0	
Approach LOS		B			B			B			B	

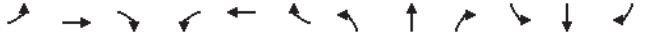
Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 55			
Natural Cycle: 65			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.73			
Intersection Signal Delay: 15.2		Intersection LOS: B	
Intersection Capacity Utilization 73.9%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 104: St David St & Gordon St



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	29	125	89	298	122	533	199	339
v/c Ratio	0.21	0.35	0.42	0.61	0.18	0.73	0.43	0.46
Control Delay	24.9	12.1	28.0	12.2	5.2	20.4	7.8	14.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.9	12.1	28.0	12.2	5.2	20.4	7.8	14.5
Queue Length 50th (m)	2.7	3.5	8.5	5.4	4.0	42.6	6.7	24.2
Queue Length 95th (m)	9.5	16.3	21.5	25.6	11.3	85.5	17.6	49.5
Internal Link Dist (m)		95.1		988.2		540.4		74.3
Turn Bay Length (m)	20.0		25.0		20.0		25.0	
Base Capacity (vph)	281	642	434	740	677	953	465	961
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.19	0.21	0.40	0.18	0.56	0.43	0.35

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	27	35	80	82	54	220	112	401	89	183	299	13
Future Volume (vph)	27	35	80	82	54	220	112	401	89	183	299	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		4.0	7.0		4.0	7.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.98		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		0.99	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.90		1.00	0.88		1.00	0.97		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	1654		1720	1652		1803	1805		1735	1834	
Flt Permitted	0.42	1.00		0.68	1.00		0.55	1.00		0.32	1.00	
Satd. Flow (perm)	792	1654		1225	1652		1043	1805		589	1834	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	29	38	87	89	59	239	122	436	97	199	325	14
RTOR Reduction (vph)	0	72	0	0	197	0	0	11	0	0	2	0
Lane Group Flow (vph)	29	53	0	89	101	0	122	522	0	199	337	0
Confl. Peds. (#/hr)			7	7			4		3	3		4
Heavy Vehicles (%)	0%	0%	1%	4%	2%	1%	0%	2%	2%	4%	3%	0%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	9.6	9.6		9.6	9.6		27.8	22.1		28.2	22.3	
Effective Green, g (s)	9.6	9.6		9.6	9.6		27.8	22.1		28.2	22.3	
Actuated g/C Ratio	0.18	0.18		0.18	0.18		0.51	0.40		0.52	0.41	
Clearance Time (s)	6.0	6.0		6.0	6.0		4.0	7.0		4.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	5.0		2.0	5.0	
Lane Grp Cap (vph)	139	290		215	290		610	730		428	749	
v/s Ratio Prot		0.03			0.06		0.02	c0.29		c0.05	0.18	
v/s Ratio Perm	0.04			c0.07			0.08			0.19		
v/c Ratio	0.21	0.18		0.41	0.35		0.20	0.71		0.46	0.45	
Uniform Delay, d1	19.3	19.2		20.0	19.8		7.1	13.6		7.8	11.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.7	0.3		1.3	0.7		0.1	4.1		0.3	0.9	
Delay (s)	20.0	19.5		21.3	20.5		7.1	17.7		8.1	12.6	
Level of Service	B	B		C	C		A	B		A	B	
Approach Delay (s)		19.6			20.7			15.8			10.9	
Approach LOS		B			C			B			B	

Intersection Summary					
HCM 2000 Control Delay	15.7	HCM 2000 Level of Service		B	
HCM 2000 Volume to Capacity ratio	0.60				
Actuated Cycle Length (s)	54.6	Sum of lost time (s)		17.0	
Intersection Capacity Utilization	73.9%	ICU Level of Service		D	
Analysis Period (min)	15				

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	84	122	11	63	90	59	8	459	39	38	394	29
Future Volume (vph)	84	122	11	63	90	59	8	459	39	38	394	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	15.0		0.0	20.0		0.0	20.0		0.0	20.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	50.0			30.0			30.0			30.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		0.99			0.99	1.00		1.00	1.00	
Frt		0.988			0.941			0.988			0.990	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1787	1789	0	1752	1730	0	1597	1835	0	1805	1821	0
Flt Permitted	0.654			0.665			0.459			0.391		
Satd. Flow (perm)	1230	1789	0	1210	1730	0	765	1835	0	740	1821	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8			57			10			9	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		1030.9			1009.0			391.9			424.5	
Travel Time (s)		74.2			72.6			28.2			30.6	
Confl. Peds. (#/hr)			10	10			19		11	11		19
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	5%	0%	3%	1%	7%	13%	2%	3%	0%	3%	3%
Adj. Flow (vph)	91	133	12	68	98	64	9	499	42	41	428	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	91	145	0	68	162	0	9	541	0	41	460	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	25.0	25.0		25.0	25.0		35.0	35.0		35.0	35.0	
Total Split (s)	25.0	25.0		25.0	25.0		35.0	35.0		35.0	35.0	
Total Split (%)	41.7%	41.7%		41.7%	41.7%		58.3%	58.3%		58.3%	58.3%	
Maximum Green (s)	19.0	19.0		19.0	19.0		30.0	30.0		30.0	30.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)	10.0	10.0		10.0	10.0		20.0	20.0		20.0	20.0	
Flash Dont Walk (s)	8.0	8.0		8.0	8.0		10.0	10.0		10.0	10.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	11.1	11.1		11.0	11.0		24.4	24.4		24.4	24.4	
Actuated g/C Ratio	0.27	0.27		0.26	0.26		0.59	0.59		0.59	0.59	
v/c Ratio	0.28	0.30		0.21	0.33		0.02	0.50		0.09	0.43	
Control Delay	16.7	15.3		15.9	11.9		6.5	9.8		7.3	8.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	16.7	15.3		15.9	11.9		6.5	9.8		7.3	8.9	
LOS	B	B		B	B		A	A		A	A	
Approach Delay		15.9			13.1			9.8			8.8	
Approach LOS		B			B			A			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 41.7			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.50			
Intersection Signal Delay: 10.9		Intersection LOS: B	
Intersection Capacity Utilization 58.7%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 105: St David St & Garafraxa St

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	91	145	68	162	9	541	41	460
v/c Ratio	0.28	0.30	0.21	0.33	0.02	0.50	0.09	0.43
Control Delay	16.7	15.3	15.9	11.9	6.5	9.8	7.3	8.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.7	15.3	15.9	11.9	6.5	9.8	7.3	8.9
Queue Length 50th (m)	5.1	7.8	3.8	5.9	0.3	25.6	1.5	20.5
Queue Length 95th (m)	17.9	24.1	14.1	21.5	2.2	60.4	6.3	48.7
Internal Link Dist (m)		1006.9		985.0		367.9		400.5
Turn Bay Length (m)	15.0		20.0		20.0		20.0	
Base Capacity (vph)	590	863	581	860	575	1383	557	1372
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.17	0.12	0.19	0.02	0.39	0.07	0.34

Intersection Summary

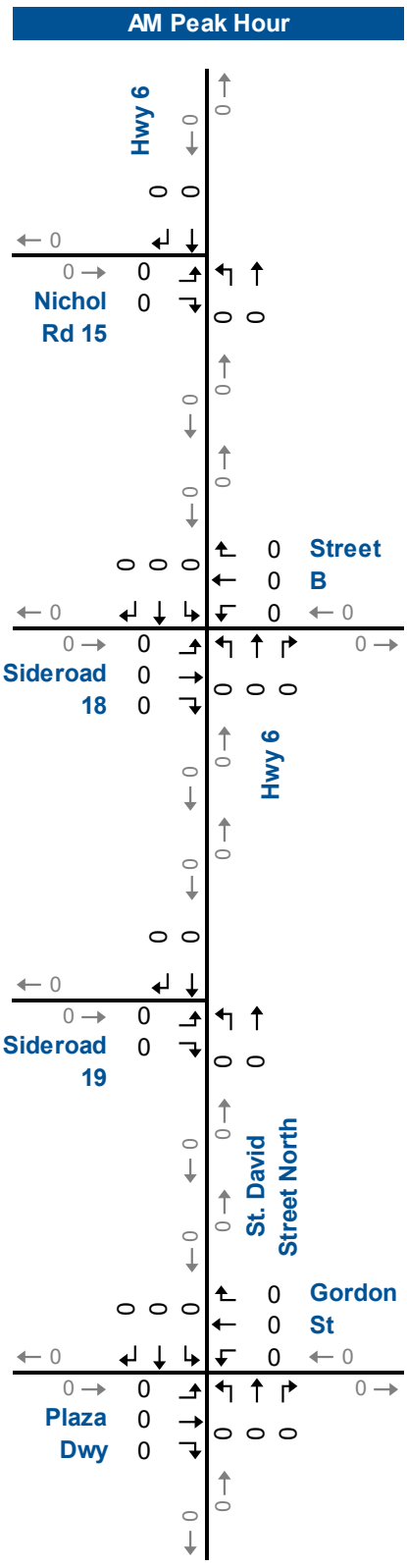
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	84	122	11	63	90	59	8	459	39	38	394	29
Future Volume (vph)	84	122	11	63	90	59	8	459	39	38	394	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		0.99	1.00		0.99	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.94		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1787	1789		1735	1729		1586	1836		1799	1821	
Flt Permitted	0.65	1.00		0.66	1.00		0.46	1.00		0.39	1.00	
Satd. Flow (perm)	1231	1789		1214	1729		767	1836		741	1821	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	91	133	12	68	98	64	9	499	42	41	428	32
RTOR Reduction (vph)	0	6	0	0	45	0	0	5	0	0	4	0
Lane Group Flow (vph)	91	139	0	68	117	0	9	536	0	41	456	0
Confl. Peds. (#/hr)			10	10			19		11	11		19
Heavy Vehicles (%)	1%	5%	0%	3%	1%	7%	13%	2%	3%	0%	3%	3%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	8.8	8.8		8.8	8.8		22.9	22.9		22.9	22.9	
Effective Green, g (s)	8.8	8.8		8.8	8.8		22.9	22.9		22.9	22.9	
Actuated g/C Ratio	0.21	0.21		0.21	0.21		0.54	0.54		0.54	0.54	
Clearance Time (s)	6.0	6.0		6.0	6.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)	253	368		250	356		411	984		397	976	
v/s Ratio Prot		c0.08			0.07			c0.29			0.25	
v/s Ratio Perm	0.07			0.06			0.01			0.06		
v/c Ratio	0.36	0.38		0.27	0.33		0.02	0.55		0.10	0.47	
Uniform Delay, d1	14.5	14.6		14.3	14.4		4.6	6.5		4.9	6.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.8	1.4		1.2	1.1		0.0	1.1		0.2	0.7	
Delay (s)	16.4	15.9		15.5	15.6		4.7	7.6		5.1	6.9	
Level of Service	B	B		B	B		A	A		A	A	
Approach Delay (s)		16.1			15.5			7.5			6.7	
Approach LOS		B			B			A			A	

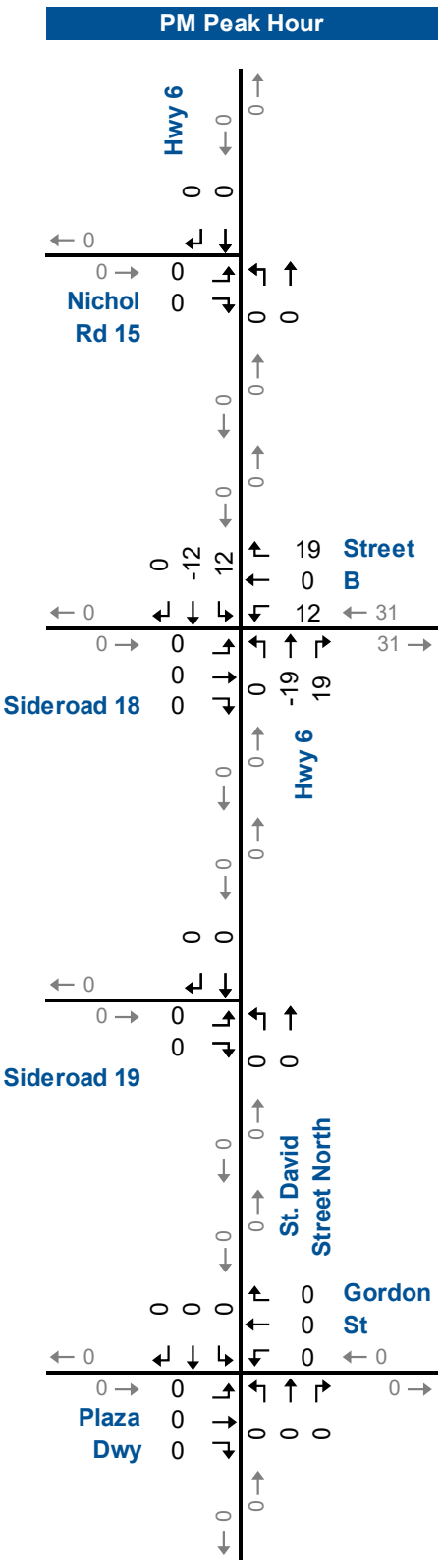
Intersection Summary				
HCM 2000 Control Delay	9.8	HCM 2000 Level of Service	A	
HCM 2000 Volume to Capacity ratio	0.50			
Actuated Cycle Length (s)	42.7	Sum of lost time (s)	11.0	
Intersection Capacity Utilization	58.7%	ICU Level of Service	B	
Analysis Period (min)	15			

c Critical Lane Group

Appendix D

Pass-by Volumes





paradigm TRANSPORTATION SOLUTIONS LIMITED

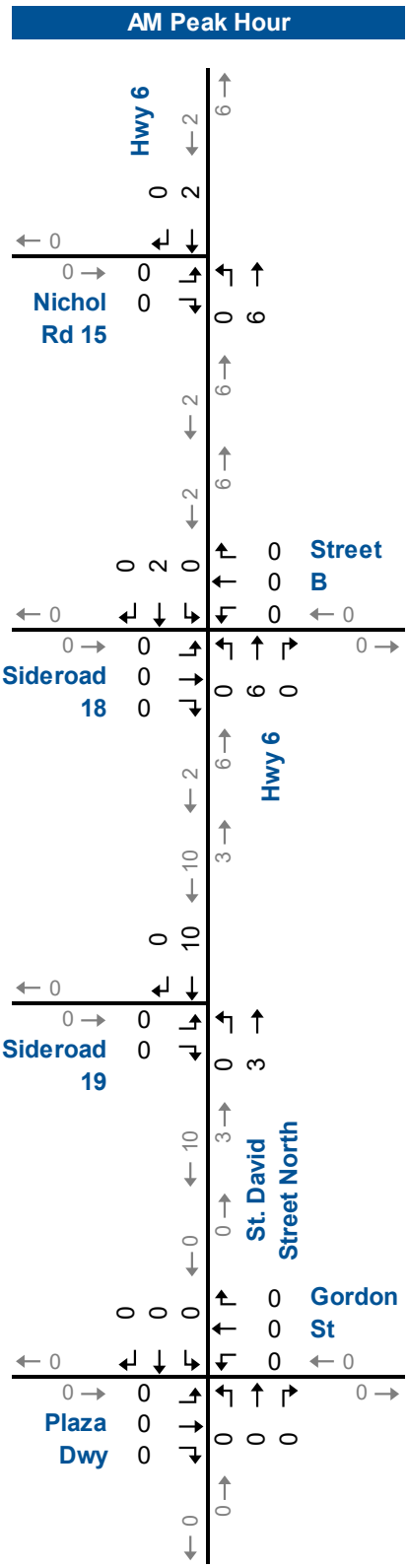
Pass-by Traffic Volumes

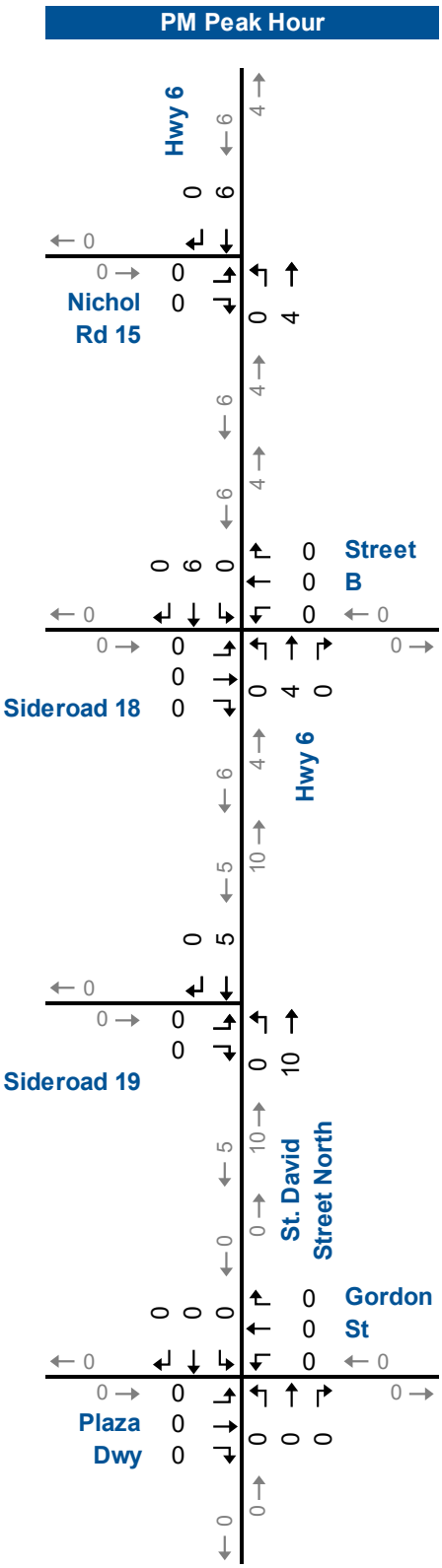
968 St. David Street, Fergus
230599

Figure 1

Appendix E

Background Development Traffic Volumes



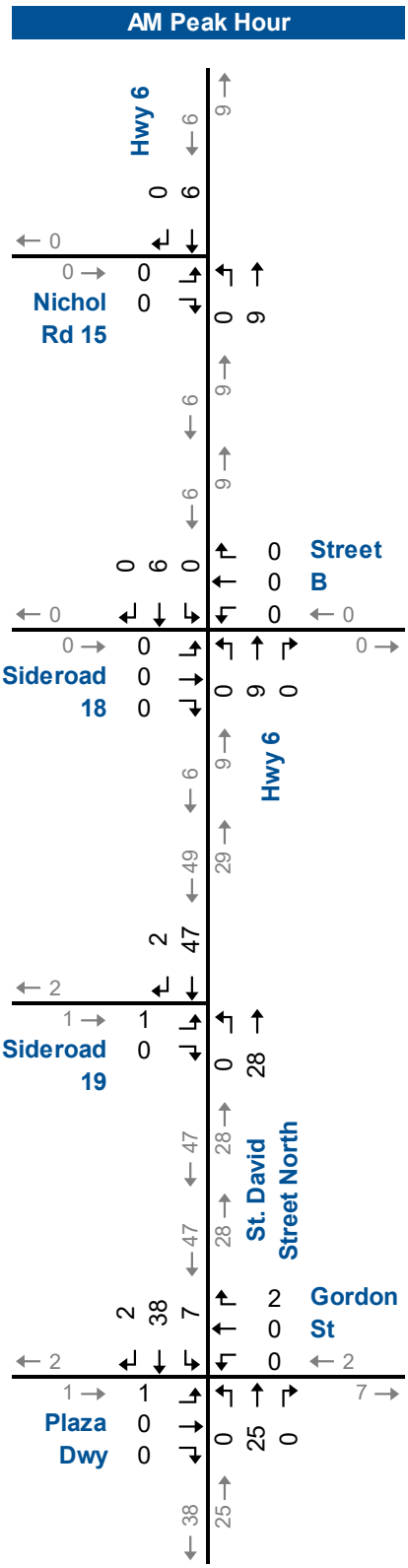


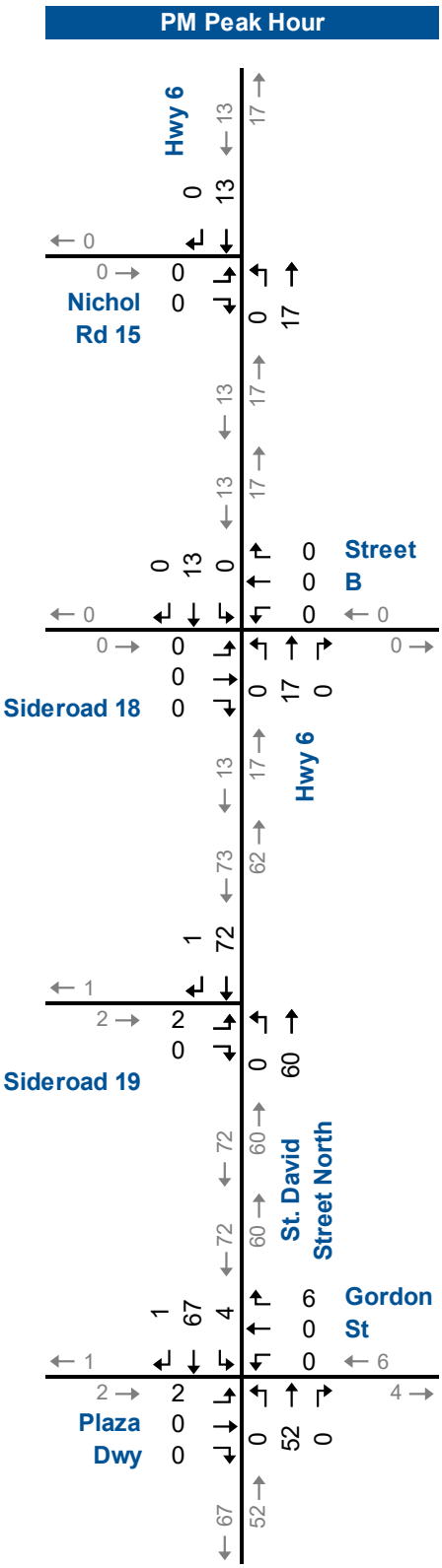
paradigm
TRANSPORTATION SOLUTIONS LIMITED

961 St. David Street Traffic Volumes

968 St. David Street, Fergus
230599

Figure 1



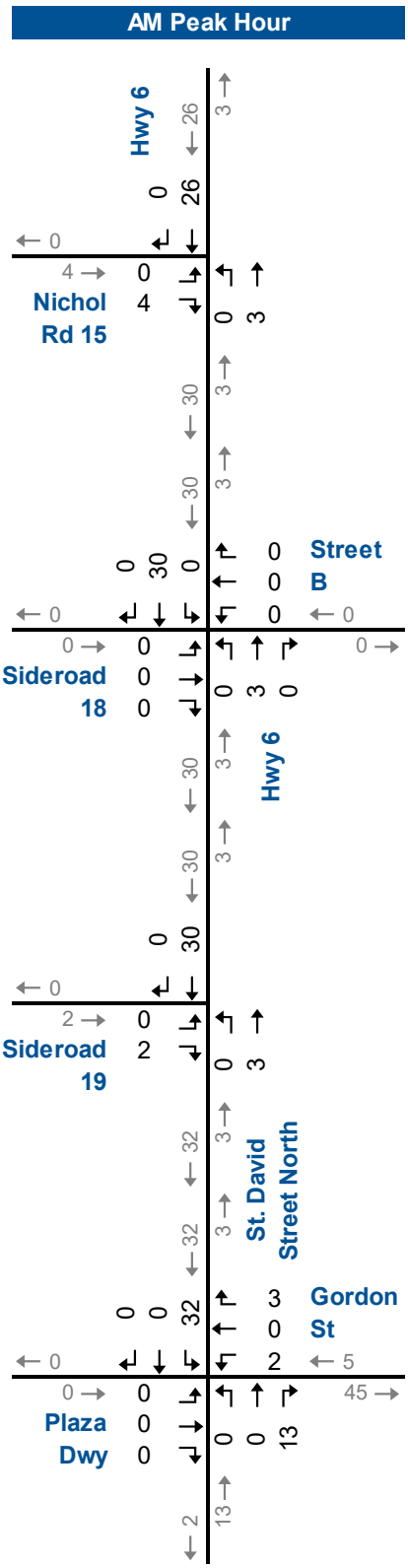


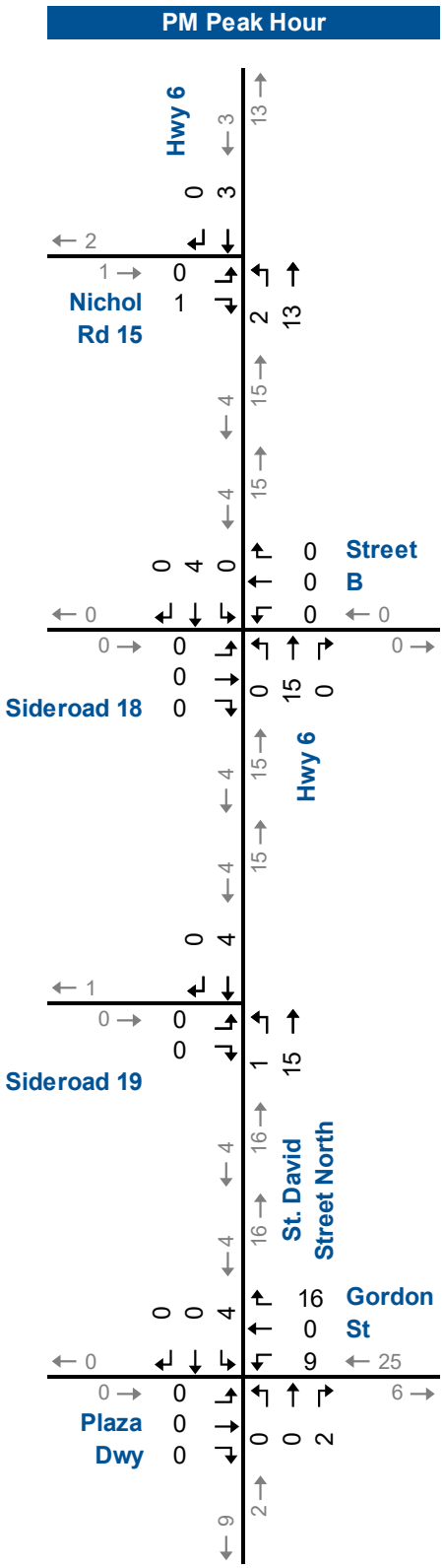
paradigm TRANSPORTATION SOLUTIONS LIMITED

950-960 St. David Street Traffic Volumes

968 St. David Street, Fergus
230599

Figure 2

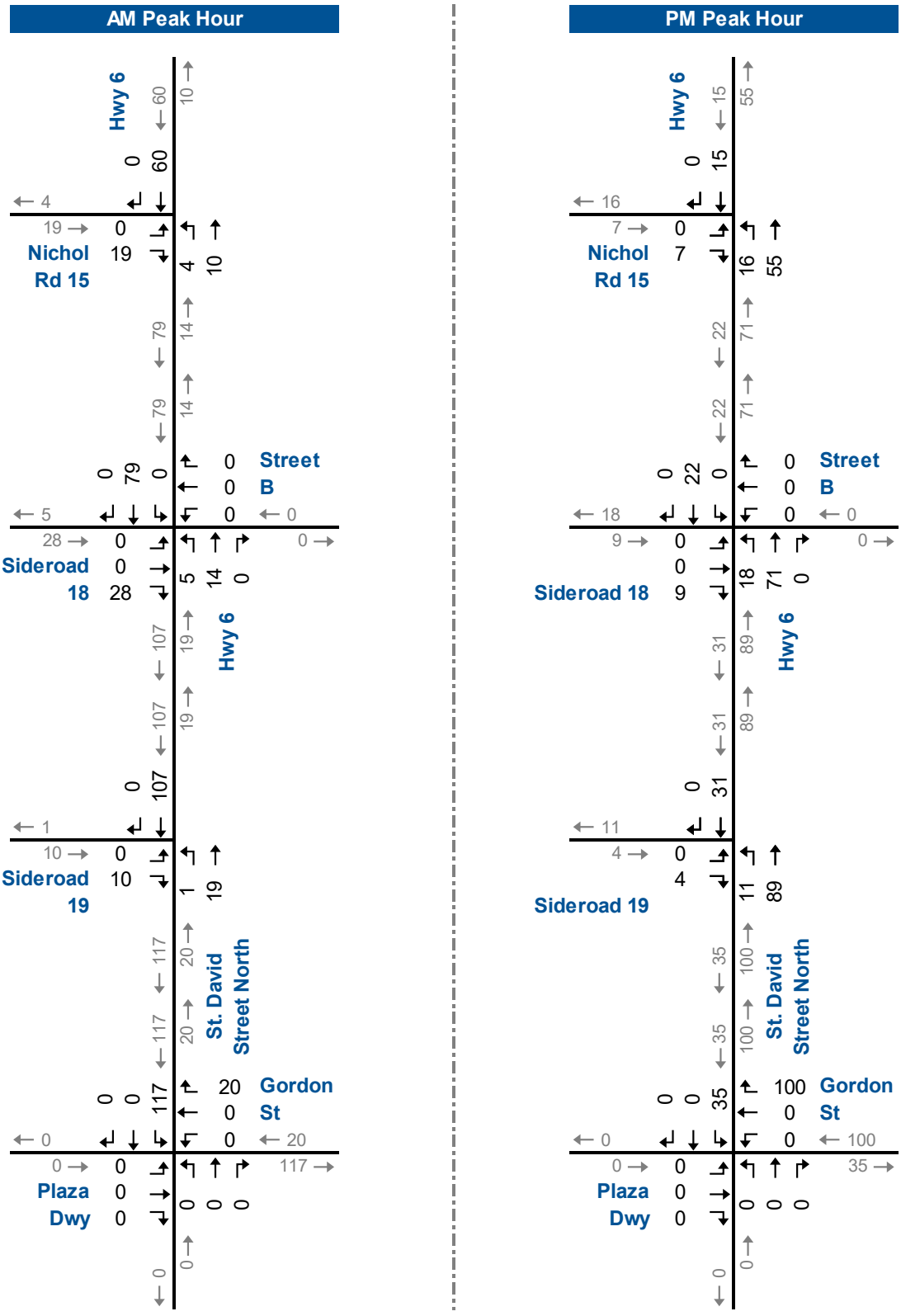




Centre Wellington Operations Centre Traffic Volumes

968 St. David Street, Fergus
230599

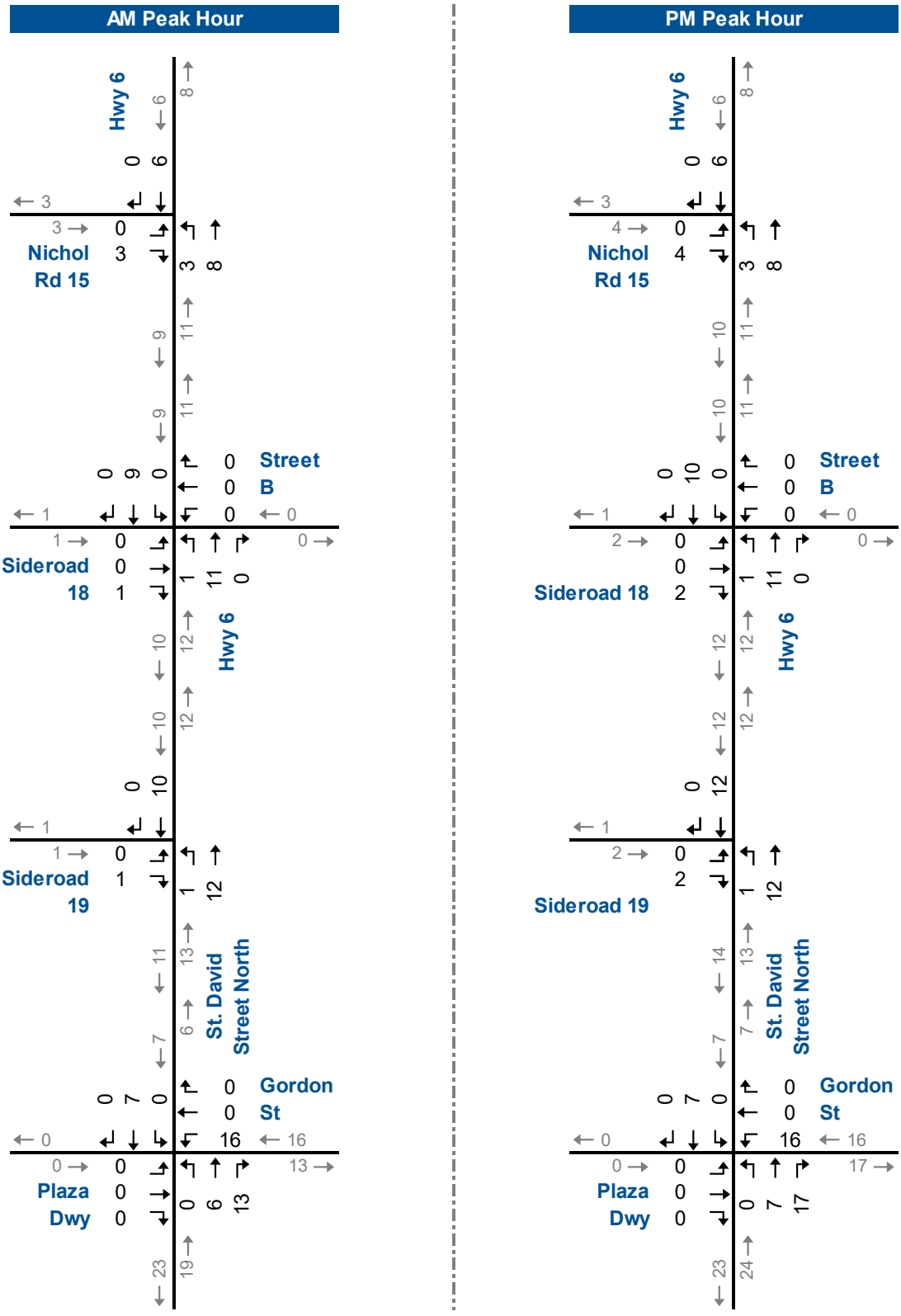
Figure 3



Dickson Drive Industrial Lands Traffic Volumes

968 St. David Street, Fergus
230599

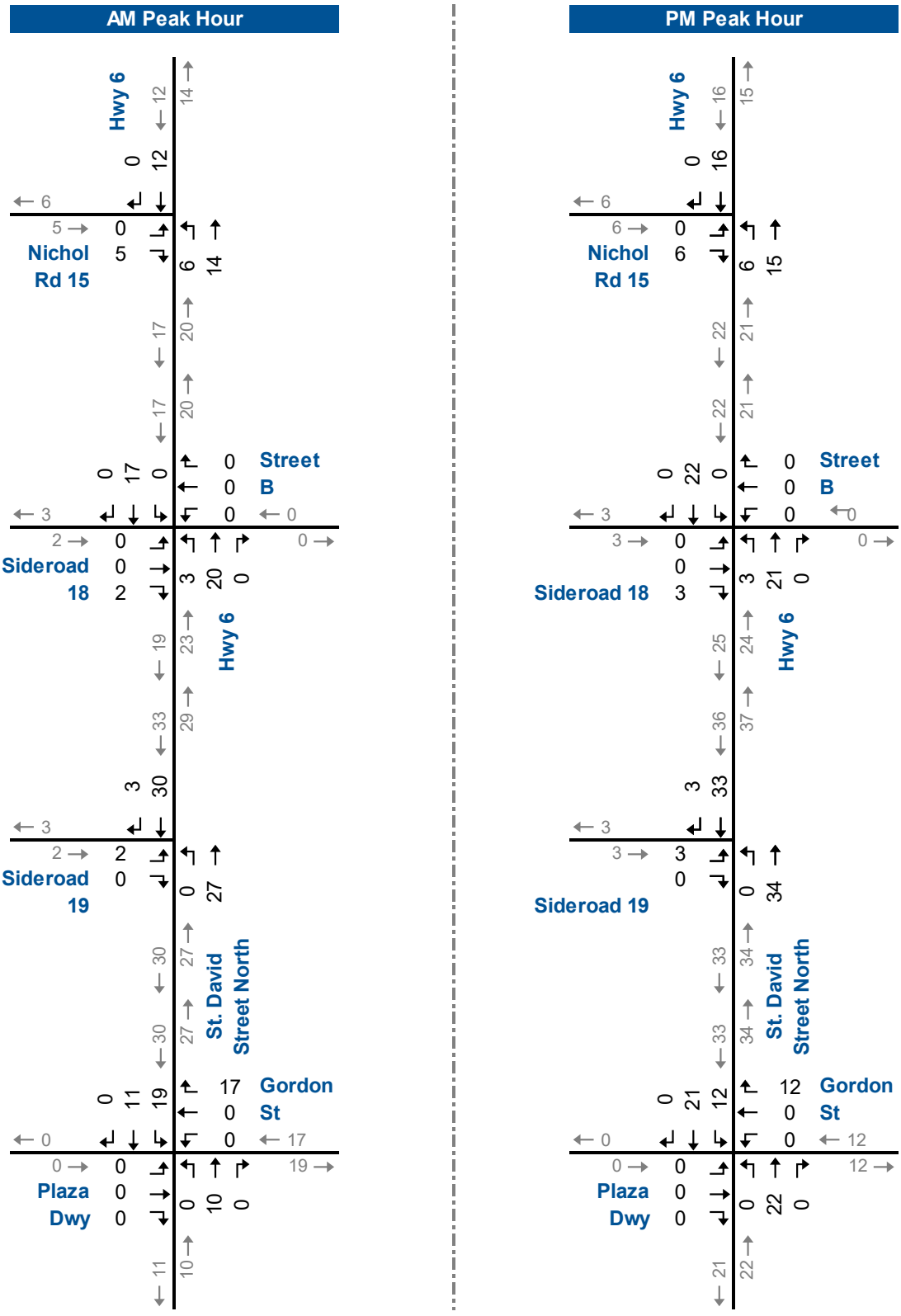
Figure 4



820 St. David Street North
Traffic Volumes

968 St. David Street, Fergus
230599

Figure 5



930 St. David Street North
Traffic Volumes

968 St. David Street, Fergus
230599

Figure 6

Appendix F1

2030 Background Operation Synchro Reports

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	22	129	115	256	420	24
Future Volume (vph)	22	129	115	256	420	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	115.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		100.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.885				0.993	
Flt Protected	0.993		0.950			
Satd. Flow (prot)	1588	0	1770	1667	1814	0
Flt Permitted	0.993		0.950			
Satd. Flow (perm)	1588	0	1770	1667	1814	0
Link Speed (k/h)	80			80	80	
Link Distance (m)	1005.9			726.4	1036.6	
Travel Time (s)	45.3			32.7	46.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	6%	2%	14%	4%	4%
Adj. Flow (vph)	24	140	125	278	457	26
Shared Lane Traffic (%)						
Lane Group Flow (vph)	164	0	125	278	483	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	49.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	22	129	115	256	420	24
Future Volume (Veh/h)	22	129	115	256	420	24
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	24	140	125	278	457	26
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	998	470	483			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	998	470	483			
tC, single (s)	6.4	6.3	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.4	2.2			
p0 queue free %	90	76	88			
cM capacity (veh/h)	241	585	1080			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	164	125	278	483
Volume Left	24	125	0	0
Volume Right	140	0	0	26
cSH	484	1080	1700	1700
Volume to Capacity	0.34	0.12	0.16	0.28
Queue Length 95th (m)	11.9	3.1	0.0	0.0
Control Delay (s)	16.2	8.8	0.0	0.0
Lane LOS	C	A		
Approach Delay (s)	16.2	2.7		0.0
Approach LOS	C			

Intersection Summary				
Average Delay		3.6		
Intersection Capacity Utilization		49.1%	ICU Level of Service	A
Analysis Period (min)		15		

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	12	173	110	374	538	19
Future Volume (vph)	12	173	110	374	538	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	110.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		75.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.874				0.995	
Flt Protected	0.997		0.950			
Satd. Flow (prot)	1610	0	1626	1712	1774	0
Flt Permitted	0.997		0.950			
Satd. Flow (perm)	1610	0	1626	1712	1774	0
Link Speed (k/h)	50			60	60	
Link Distance (m)	1004.3			419.5	285.9	
Travel Time (s)	72.3			25.2	17.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	3%	11%	11%	6%	22%
Adj. Flow (vph)	13	188	120	407	585	21
Shared Lane Traffic (%)						
Lane Group Flow (vph)	201	0	120	407	606	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 56.9%		ICU Level of Service B	
Analysis Period (min) 15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	12	173	110	374	538	19
Future Volume (Veh/h)	12	173	110	374	538	19
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	13	188	120	407	585	21
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1242	596	606			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1242	596	606			
tC, single (s)	6.4	6.2	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.3			
p0 queue free %	92	63	87			
cM capacity (veh/h)	169	502	930			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	201	120	407	606
Volume Left	13	120	0	0
Volume Right	188	0	0	21
cSH	445	930	1700	1700
Volume to Capacity	0.45	0.13	0.24	0.36
Queue Length 95th (m)	18.4	3.5	0.0	0.0
Control Delay (s)	19.6	9.4	0.0	0.0
Lane LOS	C	A		
Approach Delay (s)	19.6	2.2		0.0
Approach LOS	C			

Intersection Summary				
Average Delay		3.8		
Intersection Capacity Utilization		56.9%	ICU Level of Service	B
Analysis Period (min)		15		

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	10	61	25	496	755	21
Future Volume (vph)	10	61	25	496	755	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	20.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		15.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.884				0.996	
Flt Protected	0.993		0.950			
Satd. Flow (prot)	1536	0	1583	1727	1832	0
Flt Permitted	0.993		0.950			
Satd. Flow (perm)	1536	0	1583	1727	1832	0
Link Speed (k/h)	50			50	60	
Link Distance (m)	1002.3			98.3	419.5	
Travel Time (s)	72.2			7.1	25.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	10%	14%	10%	3%	13%
Adj. Flow (vph)	11	66	27	539	821	23
Shared Lane Traffic (%)						
Lane Group Flow (vph)	77	0	27	539	844	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	52.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	10	61	25	496	755	21
Future Volume (Veh/h)	10	61	25	496	755	21
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	66	27	539	821	23
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				98		
pX, platoon unblocked	0.84					
vC, conflicting volume	1426	832	844			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1412	832	844			
tC, single (s)	6.4	6.3	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.4	2.3			
p0 queue free %	91	82	96			
cM capacity (veh/h)	125	357	743			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	77	27	539	844
Volume Left	11	27	0	0
Volume Right	66	0	0	23
cSH	282	743	1700	1700
Volume to Capacity	0.27	0.04	0.32	0.50
Queue Length 95th (m)	8.6	0.9	0.0	0.0
Control Delay (s)	22.5	10.0	0.0	0.0
Lane LOS	C	B		
Approach Delay (s)	22.5	0.5		0.0
Approach LOS	C			

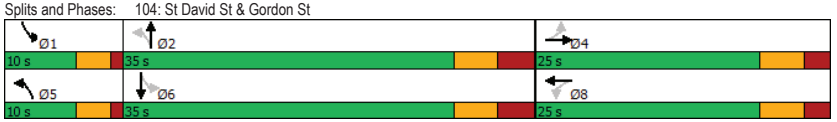
Intersection Summary				
Average Delay		1.3		
Intersection Capacity Utilization		52.0%	ICU Level of Service	A
Analysis Period (min)		15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	8	15	90	5	195	24	315	90	344	449	9
Future Volume (vph)	2	8	15	90	5	195	24	315	90	344	449	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0		0.0	25.0		0.0	20.0		0.0	25.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	20.0			70.0			60.0			15.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.98		0.99			1.00	0.99		1.00	1.00	
Frt		0.904			0.853			0.967			0.997	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1689	0	1787	1414	0	1736	1698	0	1612	1822	0
Flt Permitted	0.622			0.741			0.389			0.393		
Satd. Flow (perm)	1182	1689	0	1386	1414	0	709	1698	0	666	1822	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		16			212			25			2	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		119.1			1012.2			564.4			98.3	
Travel Time (s)		8.6			72.9			40.6			7.1	
Confl. Peds. (#/hr)			3	3			6		3	3		6
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	1%	0%	15%	4%	9%	3%	12%	4%	0%
Adj. Flow (vph)	2	9	16	98	5	212	26	342	98	374	488	10
Shared Lane Traffic (%)												
Lane Group Flow (vph)	2	25	0	98	217	0	26	440	0	374	498	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane								Yes				
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	1.0	1.0		1.0	1.0		1.0	5.0		1.0	5.0	
Minimum Split (s)	25.0	25.0		25.0	25.0		5.0	35.0		5.0	35.0	
Total Split (s)	25.0	25.0		25.0	25.0		10.0	35.0		10.0	35.0	
Total Split (%)	35.7%	35.7%		35.7%	35.7%		14.3%	50.0%		14.3%	50.0%	
Maximum Green (s)	19.0	19.0		19.0	19.0		6.0	28.0		6.0	28.0	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.0	3.8		3.0	3.8	
All-Red Time (s)	2.3	2.3		2.3	2.3		1.0	3.2		1.0	3.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		4.0	7.0		4.0	7.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	5.0		2.0	5.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)	10.0	10.0		10.0	10.0			25.0			25.0	
Flash Dont Walk (s)	8.0	8.0		8.0	8.0			14.0			14.0	
Pedestrian Calls (#/hr)	0	0		0	0			0			0	
Act Effct Green (s)	9.3	9.3		9.3	9.3		27.7	19.6		30.1	20.8	
Actuated g/C Ratio	0.18	0.18		0.18	0.18		0.53	0.37		0.57	0.40	
v/c Ratio	0.01	0.08		0.40	0.51		0.06	0.68		0.76	0.69	
Control Delay	20.0	13.7		26.0	8.9		4.6	18.9		19.6	19.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	20.0	13.7		26.0	8.9		4.6	18.9		19.6	19.0	
LOS	B	B		C	A		A	B		B	B	
Approach Delay		14.2			14.3			18.1			19.2	
Approach LOS		B			B			B			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 52.5			
Natural Cycle: 65			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.76			
Intersection Signal Delay: 17.9		Intersection LOS: B	
Intersection Capacity Utilization 68.7%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 104: St David St & Gordon St



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	2	25	98	217	26	440	374	498
v/c Ratio	0.01	0.08	0.40	0.51	0.06	0.68	0.76	0.69
Control Delay	20.0	13.7	26.0	8.9	4.6	18.9	19.6	19.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.0	13.7	26.0	8.9	4.6	18.9	19.6	19.0
Queue Length 50th (m)	0.2	0.8	8.7	0.4	0.8	32.2	14.3	38.0
Queue Length 95th (m)	1.7	6.3	23.0	16.2	3.3	65.0	#46.1	75.7
Internal Link Dist (m)		95.1		988.2		540.4		74.3
Turn Bay Length (m)	20.0		25.0		20.0		25.0	
Base Capacity (vph)	439	637	514	658	510	940	492	1000
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.00	0.04	0.19	0.33	0.05	0.47	0.76	0.50

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	8	15	90	5	195	24	315	90	344	449	9
Future Volume (vph)	2	8	15	90	5	195	24	315	90	344	449	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		4.0	7.0		4.0	7.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.98		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.90		1.00	0.85		1.00	0.97		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	1691		1780	1414		1734	1697		1611	1822	
Flt Permitted	0.62	1.00		0.74	1.00		0.39	1.00		0.39	1.00	
Satd. Flow (perm)	1183	1691		1388	1414		710	1697		666	1822	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2	9	16	98	5	212	26	342	98	374	488	10
RTOR Reduction (vph)	0	13	0	0	174	0	0	16	0	0	1	0
Lane Group Flow (vph)	2	12	0	98	43	0	26	424	0	374	497	0
Confl. Peds. (#/hr)			3	3			6		3	3		6
Heavy Vehicles (%)	0%	0%	0%	1%	0%	15%	4%	9%	3%	12%	4%	0%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	9.3	9.3		9.3	9.3		24.7	19.7		27.1	20.9	
Effective Green, g (s)	9.3	9.3		9.3	9.3		24.7	19.7		27.1	20.9	
Actuated g/C Ratio	0.18	0.18		0.18	0.18		0.47	0.38		0.52	0.40	
Clearance Time (s)	6.0	6.0		6.0	6.0		4.0	7.0		4.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	5.0		2.0	5.0	
Lane Grp Cap (vph)	210	301		247	251		434	640		458	729	
v/s Ratio Prot		0.01			0.03		0.01	0.25		c0.10	0.27	
v/s Ratio Perm	0.00			c0.07			0.02			c0.33		
v/c Ratio	0.01	0.04		0.40	0.17		0.06	0.66		0.82	0.68	
Uniform Delay, d1	17.7	17.8		19.0	18.2		7.5	13.5		9.1	12.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	0.1		1.1	0.3		0.0	3.4		10.2	3.4	
Delay (s)	17.7	17.8		20.0	18.5		7.5	16.9		19.3	16.3	
Level of Service	B	B		C	B		A	B		B	B	
Approach Delay (s)		17.8			19.0			16.4			17.6	
Approach LOS		B			B			B			B	

Intersection Summary				
HCM 2000 Control Delay	17.5	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.73			
Actuated Cycle Length (s)	52.2	Sum of lost time (s)	17.0	
Intersection Capacity Utilization	68.7%	ICU Level of Service	C	
Analysis Period (min)	15			

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	41	119	20	67	107	61	13	302	30	31	456	29
Future Volume (vph)	41	119	20	67	107	61	13	302	30	31	456	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	15.0		0.0	20.0		0.0	20.0		0.0	20.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	50.0			30.0			30.0			30.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	0.99		0.98	0.99		1.00	1.00		0.99	1.00	
Frt		0.978			0.946			0.986			0.991	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1757	0	1770	1740	0	1543	1675	0	1543	1825	0
Flt Permitted	0.643			0.661			0.401			0.546		
Satd. Flow (perm)	1193	1757	0	1211	1740	0	651	1675	0	882	1825	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		15			50			12			8	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		1030.9			1009.0			391.9			424.5	
Travel Time (s)		74.2			72.6			28.2			30.6	
Confl. Peds. (#/hr)	3		12	12		3	1		10	10		1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	6%	0%	2%	2%	3%	17%	12%	7%	17%	3%	4%
Adj. Flow (vph)	45	129	22	73	116	66	14	328	33	34	496	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	45	151	0	73	182	0	14	361	0	34	528	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	25.0	25.0		25.0	25.0		35.0	35.0		35.0	35.0	
Total Split (s)	25.0	25.0		25.0	25.0		35.0	35.0		35.0	35.0	
Total Split (%)	41.7%	41.7%		41.7%	41.7%		58.3%	58.3%		58.3%	58.3%	
Maximum Green (s)	19.0	19.0		19.0	19.0		30.0	30.0		30.0	30.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)	10.0	10.0		10.0	10.0		20.0	20.0		20.0	20.0	
Flash Dont Walk (s)	8.0	8.0		8.0	8.0		10.0	10.0		10.0	10.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	11.2	11.2		11.1	11.1		24.3	24.3		24.3	24.3	
Actuated g/C Ratio	0.27	0.27		0.27	0.27		0.58	0.58		0.58	0.58	
v/c Ratio	0.14	0.31		0.23	0.36		0.04	0.37		0.07	0.50	
Control Delay	15.0	14.8		15.9	13.0		6.8	8.5		7.0	9.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	15.0	14.8		15.9	13.0		6.8	8.5		7.0	9.9	
LOS	B	B		B	B		A	A		A	A	
Approach Delay		14.9			13.8			8.4			9.7	
Approach LOS		B			B			A			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 41.7			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.50			
Intersection Signal Delay: 10.8		Intersection LOS: B	
Intersection Capacity Utilization 53.7%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 105: St David St & Garafraxa St

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	45	151	73	182	14	361	34	528
v/c Ratio	0.14	0.31	0.23	0.36	0.04	0.37	0.07	0.50
Control Delay	15.0	14.8	15.9	13.0	6.8	8.5	7.0	9.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.0	14.8	15.9	13.0	6.8	8.5	7.0	9.9
Queue Length 50th (m)	2.4	7.6	4.0	7.4	0.5	15.1	1.2	24.9
Queue Length 95th (m)	10.3	24.3	15.0	25.1	3.0	37.9	5.4	59.5
Internal Link Dist (m)		1006.9		985.0		367.9		400.5
Turn Bay Length (m)	15.0		20.0		20.0		20.0	
Base Capacity (vph)	573	852	582	862	490	1264	664	1376
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.18	0.13	0.21	0.03	0.29	0.05	0.38

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	41	119	20	67	107	61	13	302	30	31	456	29
Future Volume (vph)	41	119	20	67	107	61	13	302	30	31	456	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		0.99	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.95		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1765	1759		1749	1740		1542	1676		1536	1825	
Flt Permitted	0.64	1.00		0.66	1.00		0.40	1.00		0.55	1.00	
Satd. Flow (perm)	1194	1759		1217	1740		651	1676		882	1825	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	45	129	22	73	116	66	14	328	33	34	496	32
RTOR Reduction (vph)	0	12	0	0	40	0	0	6	0	0	4	0
Lane Group Flow (vph)	45	139	0	73	142	0	14	355	0	34	524	0
Confl. Peds. (#/hr)	3		12	12		3	1		10	10		1
Heavy Vehicles (%)	2%	6%	0%	2%	2%	3%	17%	12%	7%	17%	3%	4%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	8.9	8.9		8.9	8.9		22.9	22.9		22.9	22.9	
Effective Green, g (s)	8.9	8.9		8.9	8.9		22.9	22.9		22.9	22.9	
Actuated g/C Ratio	0.21	0.21		0.21	0.21		0.54	0.54		0.54	0.54	
Clearance Time (s)	6.0	6.0		6.0	6.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)	248	365		253	361		348	896		471	976	
v/s Ratio Prot		0.08			c0.08			0.21			c0.29	
v/s Ratio Perm	0.04			0.06			0.02			0.04		
v/c Ratio	0.18	0.38		0.29	0.39		0.04	0.40		0.07	0.54	
Uniform Delay, d1	14.0	14.6		14.3	14.6		4.7	5.9		4.8	6.5	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.7	1.4		1.3	1.5		0.1	0.6		0.1	1.0	
Delay (s)	14.7	16.0		15.6	16.1		4.8	6.5		4.9	7.5	
Level of Service	B	B		B	B		A	A		A	A	
Approach Delay (s)		15.7			16.0			6.4			7.4	
Approach LOS		B			B			A			A	

Intersection Summary				
HCM 2000 Control Delay	9.9	HCM 2000 Level of Service	A	
HCM 2000 Volume to Capacity ratio	0.50			
Actuated Cycle Length (s)	42.8	Sum of lost time (s)	11.0	
Intersection Capacity Utilization	53.7%	ICU Level of Service	A	
Analysis Period (min)	15			

c Critical Lane Group

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	23	141	141	485	299	23
Future Volume (vph)	23	141	141	485	299	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	115.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		100.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.884				0.990	
Flt Protected	0.993		0.950			
Satd. Flow (prot)	1668	0	1805	1881	1814	0
Flt Permitted	0.993		0.950			
Satd. Flow (perm)	1668	0	1805	1881	1814	0
Link Speed (k/h)	80			80	80	
Link Distance (m)	1005.9			726.4	1036.6	
Travel Time (s)	45.3			32.7	46.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	1%	4%	0%
Adj. Flow (vph)	25	153	153	527	325	25
Shared Lane Traffic (%)						
Lane Group Flow (vph)	178	0	153	527	350	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	44.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	23	141	141	485	299	23
Future Volume (Veh/h)	23	141	141	485	299	23
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	25	153	153	527	325	25
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1170	338	350			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1170	338	350			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	87	78	87			
cM capacity (veh/h)	188	709	1220			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	178	153	527	350
Volume Left	25	153	0	0
Volume Right	153	0	0	25
cSH	511	1220	1700	1700
Volume to Capacity	0.35	0.13	0.31	0.21
Queue Length 95th (m)	12.4	3.4	0.0	0.0
Control Delay (s)	15.8	8.4	0.0	0.0
Lane LOS	C	A		
Approach Delay (s)	15.8	1.9		0.0
Approach LOS	C			

Intersection Summary			
Average Delay	3.4		
Intersection Capacity Utilization	44.9%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	5	155	150	641	449	11
Future Volume (vph)	5	155	150	641	449	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	110.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		75.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.869				0.997	
Flt Protected	0.999		0.950			
Satd. Flow (prot)	1649	0	1787	1881	1840	0
Flt Permitted	0.999		0.950			
Satd. Flow (perm)	1649	0	1787	1881	1840	0
Link Speed (k/h)	50			60	60	
Link Distance (m)	1004.3			419.5	285.9	
Travel Time (s)	72.3			25.2	17.2	
Confl. Peds. (#/hr)			3			3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	1%	1%	3%	0%
Adj. Flow (vph)	5	168	163	697	488	12
Shared Lane Traffic (%)						
Lane Group Flow (vph)	173	0	163	697	500	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	52.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	5	155	150	641	449	11
Future Volume (Veh/h)	5	155	150	641	449	11
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	168	163	697	488	12
Pedestrians	3					
Lane Width (m)	3.6					
Walking Speed (m/s)	1.2					
Percent Blockage	0					
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1520	497	503			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1520	497	503			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	96	71	85			
cM capacity (veh/h)	112	576	1064			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	173	163	697	500
Volume Left	5	163	0	0
Volume Right	168	0	0	12
cSH	514	1064	1700	1700
Volume to Capacity	0.34	0.15	0.41	0.29
Queue Length 95th (m)	11.8	4.3	0.0	0.0
Control Delay (s)	15.5	9.0	0.0	0.0
Lane LOS	C	A		
Approach Delay (s)	15.5	1.7		0.0
Approach LOS	C			

Intersection Summary				
Average Delay		2.7		
Intersection Capacity Utilization		52.5%	ICU Level of Service	A
Analysis Period (min)		15		

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	22	73	87	834	616	58
Future Volume (vph)	22	73	87	834	616	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	20.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		15.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.896				0.988	
Flt Protected	0.988		0.950			
Satd. Flow (prot)	1525	0	1583	1720	1793	0
Flt Permitted	0.988		0.950			
Satd. Flow (perm)	1525	0	1583	1720	1793	0
Link Speed (k/h)	50			50	60	
Link Distance (m)	1002.3			98.3	419.5	
Travel Time (s)	72.2			7.1	25.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	10%	14%	10%	3%	13%
Bus Blockages (#/hr)	6	1	0	1	2	0
Adj. Flow (vph)	24	79	95	907	670	63
Shared Lane Traffic (%)						
Lane Group Flow (vph)	103	0	95	907	733	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.03	1.00	1.00	1.01	1.01	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	56.5%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	22	73	87	834	616	58
Future Volume (Veh/h)	22	73	87	834	616	58
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	24	79	95	907	670	63
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				98		
pX, platoon unblocked	0.70					
vC, conflicting volume	1798	702	733			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1929	702	733			
tC, single (s)	6.4	6.3	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.4	2.3			
p0 queue free %	47	81	88			
cM capacity (veh/h)	45	425	820			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	103	95	907	733
Volume Left	24	95	0	0
Volume Right	79	0	0	63
cSH	144	820	1700	1700
Volume to Capacity	0.71	0.12	0.53	0.43
Queue Length 95th (m)	33.2	3.1	0.0	0.0
Control Delay (s)	75.8	10.0	0.0	0.0
Lane LOS	F	A		
Approach Delay (s)	75.8	0.9		0.0
Approach LOS	F			

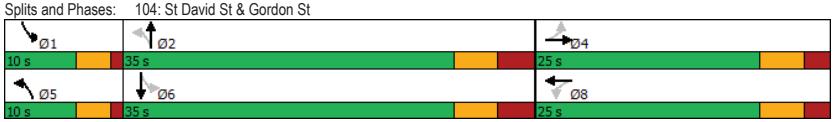
Intersection Summary				
Average Delay		4.8		
Intersection Capacity Utilization		56.5%	ICU Level of Service	B
Analysis Period (min)		15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	31	37	85	112	57	368	119	507	113	249	412	15
Future Volume (vph)	31	37	85	112	57	368	119	507	113	249	412	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0		0.0	25.0		0.0	20.0		0.0	25.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	20.0			70.0			60.0			15.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.98		0.99			1.00	1.00		1.00	1.00	
Frt		0.895			0.870			0.973			0.995	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1649	0	1736	1634	0	1805	1805	0	1736	1836	0
Flt Permitted	0.331			0.673			0.412			0.190		
Satd. Flow (perm)	629	1649	0	1216	1634	0	781	1805	0	347	1836	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		92			337			19			3	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		119.1			1012.2			564.4			98.3	
Travel Time (s)		8.6			72.9			40.6			7.1	
Confl. Peds. (#/hr)			7	7			4		3	3		4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	1%	4%	2%	1%	0%	2%	2%	4%	3%	0%
Adj. Flow (vph)	34	40	92	122	62	400	129	551	123	271	448	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	34	132	0	122	462	0	129	674	0	271	464	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane								Yes				
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	1.0	1.0		1.0	1.0		1.0	5.0		1.0	5.0	
Minimum Split (s)	25.0	25.0		25.0	25.0		5.0	35.0		5.0	35.0	
Total Split (s)	25.0	25.0		25.0	25.0		10.0	35.0		10.0	35.0	
Total Split (%)	35.7%	35.7%		35.7%	35.7%		14.3%	50.0%		14.3%	50.0%	
Maximum Green (s)	19.0	19.0		19.0	19.0		6.0	28.0		6.0	28.0	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.0	3.8		3.0	3.8	
All-Red Time (s)	2.3	2.3		2.3	2.3		1.0	3.2		1.0	3.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		4.0	7.0		4.0	7.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	5.0		2.0	5.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)	10.0	10.0		10.0	10.0			25.0			25.0	
Flash Dont Walk (s)	8.0	8.0		8.0	8.0			14.0			14.0	
Pedestrian Calls (#/hr)	0	0		0	0			0			0	
Act Effct Green (s)	12.1	12.1		12.1	12.1		35.3	26.7		36.2	27.1	
Actuated g/C Ratio	0.19	0.19		0.19	0.19		0.57	0.43		0.58	0.44	
v/c Ratio	0.28	0.33		0.51	0.78		0.24	0.86		0.80	0.58	
Control Delay	27.1	11.0		30.5	17.2		6.7	30.3		29.9	17.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	27.1	11.0		30.5	17.2		6.7	30.3		29.9	17.8	
LOS	C	B		C	B		A	C		C	B	
Approach Delay		14.3			20.0			26.5			22.2	
Approach LOS		B			C			C			C	

Intersection Summary		
Area Type:	Other	
Cycle Length: 70		
Actuated Cycle Length: 62.1		
Natural Cycle: 75		
Control Type: Semi Act-Uncoord		
Maximum v/c Ratio: 0.86		
Intersection Signal Delay: 22.6		Intersection LOS: C
Intersection Capacity Utilization 95.6%		ICU Level of Service F
Analysis Period (min) 15		

Splits and Phases: 104: St David St & Gordon St



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	34	132	122	462	129	674	271	464
v/c Ratio	0.28	0.33	0.51	0.78	0.24	0.86	0.80	0.58
Control Delay	27.1	11.0	30.5	17.2	6.7	30.3	29.9	17.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.1	11.0	30.5	17.2	6.7	30.3	29.9	17.8
Queue Length 50th (m)	3.6	4.1	13.6	13.6	4.8	65.7	11.0	38.9
Queue Length 95th (m)	10.9	16.4	27.9	43.3	13.9	#150.8	#47.2	79.3
Internal Link Dist (m)		95.1		988.2		540.4		74.3
Turn Bay Length (m)	20.0		25.0		20.0		25.0	
Base Capacity (vph)	194	574	376	738	550	834	338	843
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.18	0.23	0.32	0.63	0.23	0.81	0.80	0.55

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	31	37	85	112	57	368	119	507	113	249	412	15
Future Volume (vph)	31	37	85	112	57	368	119	507	113	249	412	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		4.0	7.0		4.0	7.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.98		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		0.99	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.90		1.00	0.87		1.00	0.97		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	1652		1718	1635		1804	1804		1735	1835	
Flt Permitted	0.33	1.00		0.67	1.00		0.41	1.00		0.19	1.00	
Satd. Flow (perm)	628	1652		1216	1635		782	1804		347	1835	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	34	40	92	122	62	400	129	551	123	271	448	16
RTOR Reduction (vph)	0	74	0	0	271	0	0	11	0	0	2	0
Lane Group Flow (vph)	34	58	0	122	191	0	129	663	0	271	462	0
Confl. Peds. (#/hr)			7	7			4		3	3		4
Heavy Vehicles (%)	0%	0%	1%	4%	2%	1%	0%	2%	2%	4%	3%	0%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	12.1	12.1		12.1	12.1		32.3	26.7		33.3	27.2	
Effective Green, g (s)	12.1	12.1		12.1	12.1		32.3	26.7		33.3	27.2	
Actuated g/C Ratio	0.20	0.20		0.20	0.20		0.52	0.43		0.54	0.44	
Clearance Time (s)	6.0	6.0		6.0	6.0		4.0	7.0		4.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	5.0		2.0	5.0	
Lane Grp Cap (vph)	122	322		237	319		500	778		323	806	
v/s Ratio Prot		0.04			c0.12		0.02	0.37		c0.08	0.25	
v/s Ratio Perm	0.05			0.10			0.11			c0.37		
v/c Ratio	0.28	0.18		0.51	0.60		0.26	0.85		0.84	0.57	
Uniform Delay, d1	21.2	20.8		22.3	22.7		7.8	15.8		10.5	13.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.2	0.3		1.9	3.0		0.1	9.8		16.4	1.6	
Delay (s)	22.4	21.0		24.2	25.7		7.9	25.6		27.0	14.6	
Level of Service	C	C		C	C		A	C		C	B	
Approach Delay (s)		21.3			25.4			22.8			19.1	
Approach LOS		C			C			C			B	

Intersection Summary				
HCM 2000 Control Delay	22.2	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.78			
Actuated Cycle Length (s)	61.9	Sum of lost time (s)	17.0	
Intersection Capacity Utilization	95.6%	ICU Level of Service	F	
Analysis Period (min)	15			

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	89	132	12	67	107	63	8	535	41	40	471	31
Future Volume (vph)	89	132	12	67	107	63	8	535	41	40	471	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	15.0		0.0	20.0		0.0	20.0		0.0	20.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	50.0			30.0			30.0			30.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		0.99			0.99	1.00		1.00	1.00	
Frt		0.987			0.945			0.989			0.991	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1787	1788	0	1752	1740	0	1597	1837	0	1805	1824	0
Flt Permitted	0.641			0.658			0.391			0.329		
Satd. Flow (perm)	1206	1788	0	1197	1740	0	652	1837	0	623	1824	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8			51			9			8	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		1030.9			1009.0			391.9			424.5	
Travel Time (s)		74.2			72.6			28.2			30.6	
Confl. Peds. (#/hr)			10	10			19		11	11		19
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	5%	0%	3%	1%	7%	13%	2%	3%	0%	3%	3%
Adj. Flow (vph)	97	143	13	73	116	68	9	582	45	43	512	34
Shared Lane Traffic (%)												
Lane Group Flow (vph)	97	156	0	73	184	0	9	627	0	43	546	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	25.0	25.0		25.0	25.0		35.0	35.0		35.0	35.0	
Total Split (s)	25.0	25.0		25.0	25.0		35.0	35.0		35.0	35.0	
Total Split (%)	41.7%	41.7%		41.7%	41.7%		58.3%	58.3%		58.3%	58.3%	
Maximum Green (s)	19.0	19.0		19.0	19.0		30.0	30.0		30.0	30.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)	10.0	10.0		10.0	10.0		20.0	20.0		20.0	20.0	
Flash Dont Walk (s)	8.0	8.0		8.0	8.0		10.0	10.0		10.0	10.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	11.6	11.6		11.4	11.4		26.8	26.8		26.8	26.8	
Actuated g/C Ratio	0.26	0.26		0.26	0.26		0.60	0.60		0.60	0.60	
v/c Ratio	0.31	0.33		0.24	0.38		0.02	0.56		0.11	0.49	
Control Delay	18.2	16.6		17.2	13.9		6.6	10.7		7.6	9.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	18.2	16.6		17.2	13.9		6.6	10.7		7.6	9.7	
LOS	B	B		B	B		A	B		A	A	
Approach Delay		17.2			14.9			10.7			9.6	
Approach LOS		B			B			B			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 44.3			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.56			
Intersection Signal Delay: 11.9		Intersection LOS: B	
Intersection Capacity Utilization 61.8%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 105: St David St & Garafraxa St

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	97	156	73	184	9	627	43	546
v/c Ratio	0.31	0.33	0.24	0.38	0.02	0.56	0.11	0.49
Control Delay	18.2	16.6	17.2	13.9	6.6	10.7	7.6	9.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.2	16.6	17.2	13.9	6.6	10.7	7.6	9.7
Queue Length 50th (m)	6.4	9.8	4.7	8.7	0.3	33.2	1.7	27.2
Queue Length 95th (m)	19.0	25.6	15.0	25.4	2.2	76.9	6.8	62.9
Internal Link Dist (m)		1006.9		985.0		367.9		400.5
Turn Bay Length (m)	15.0		20.0		20.0		20.0	
Base Capacity (vph)	546	815	542	816	465	1312	444	1302
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.18	0.19	0.13	0.23	0.02	0.48	0.10	0.42

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	89	132	12	67	107	63	8	535	41	40	471	31
Future Volume (vph)	89	132	12	67	107	63	8	535	41	40	471	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		0.99	1.00		0.99	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.94		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1787	1789		1735	1739		1587	1838		1799	1824	
Flt Permitted	0.64	1.00		0.66	1.00		0.39	1.00		0.33	1.00	
Satd. Flow (perm)	1207	1789		1201	1739		654	1838		623	1824	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	97	143	13	73	116	68	9	582	45	43	512	34
RTOR Reduction (vph)	0	6	0	0	41	0	0	4	0	0	4	0
Lane Group Flow (vph)	97	150	0	73	143	0	9	623	0	43	542	0
Confl. Peds. (#/hr)			10	10			19		11	11		19
Heavy Vehicles (%)	1%	5%	0%	3%	1%	7%	13%	2%	3%	0%	3%	3%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	9.2	9.2		9.2	9.2		25.3	25.3		25.3	25.3	
Effective Green, g (s)	9.2	9.2		9.2	9.2		25.3	25.3		25.3	25.3	
Actuated g/C Ratio	0.20	0.20		0.20	0.20		0.56	0.56		0.56	0.56	
Clearance Time (s)	6.0	6.0		6.0	6.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)	244	361		242	351		363	1022		346	1014	
v/s Ratio Prot		c0.08			0.08			c0.34			0.30	
v/s Ratio Perm	0.08			0.06			0.01			0.07		
v/c Ratio	0.40	0.41		0.30	0.41		0.02	0.61		0.12	0.53	
Uniform Delay, d1	15.7	15.8		15.4	15.8		4.5	6.8		4.8	6.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.2	1.6		1.5	1.6		0.1	1.5		0.3	1.0	
Delay (s)	18.0	17.4		16.9	17.4		4.6	8.3		5.2	7.4	
Level of Service	B	B		B	B		A	A		A	A	
Approach Delay (s)		17.6			17.3			8.3			7.2	
Approach LOS		B			B			A			A	

Intersection Summary				
HCM 2000 Control Delay	10.6	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.56			
Actuated Cycle Length (s)	45.5	Sum of lost time (s)	11.0	
Intersection Capacity Utilization	61.8%	ICU Level of Service	B	
Analysis Period (min)	15			

c Critical Lane Group

Appendix F2

2035 Background Operation Synchro Reports

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	23	134	120	267	436	26
Future Volume (vph)	23	134	120	267	436	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	115.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		100.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.885				0.992	
Flt Protected	0.993		0.950			
Satd. Flow (prot)	1588	0	1770	1667	1812	0
Flt Permitted	0.993		0.950			
Satd. Flow (perm)	1588	0	1770	1667	1812	0
Link Speed (k/h)	80			80	80	
Link Distance (m)	1005.9			726.4	1036.6	
Travel Time (s)	45.3			32.7	46.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	6%	2%	14%	4%	4%
Adj. Flow (vph)	25	146	130	290	474	28
Shared Lane Traffic (%)						
Lane Group Flow (vph)	171	0	130	290	502	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	50.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	23	134	120	267	436	26
Future Volume (Veh/h)	23	134	120	267	436	26
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	25	146	130	290	474	28
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1038	488	502			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1038	488	502			
tC, single (s)	6.4	6.3	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.4	2.2			
p0 queue free %	89	74	88			
cM capacity (veh/h)	226	572	1062			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	171	130	290	502
Volume Left	25	130	0	0
Volume Right	146	0	0	28
cSH	468	1062	1700	1700
Volume to Capacity	0.37	0.12	0.17	0.30
Queue Length 95th (m)	13.2	3.3	0.0	0.0
Control Delay (s)	17.1	8.9	0.0	0.0
Lane LOS	C	A		
Approach Delay (s)	17.1	2.7		0.0
Approach LOS	C			

Intersection Summary				
Average Delay		3.7		
Intersection Capacity Utilization		50.7%	ICU Level of Service	A
Analysis Period (min)		15		

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	12	180	115	390	558	20
Future Volume (vph)	12	180	115	390	558	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	110.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		75.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.873				0.995	
Flt Protected	0.997		0.950			
Satd. Flow (prot)	1608	0	1626	1712	1774	0
Flt Permitted	0.997		0.950			
Satd. Flow (perm)	1608	0	1626	1712	1774	0
Link Speed (k/h)	50			60	60	
Link Distance (m)	1004.3			419.5	285.9	
Travel Time (s)	72.3			25.2	17.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	3%	11%	11%	6%	22%
Adj. Flow (vph)	13	196	125	424	607	22
Shared Lane Traffic (%)						
Lane Group Flow (vph)	209	0	125	424	629	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	58.7%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	12	180	115	390	558	20
Future Volume (Veh/h)	12	180	115	390	558	20
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	13	196	125	424	607	22
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1292	618	629			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1292	618	629			
tC, single (s)	6.4	6.2	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.3			
p0 queue free %	92	60	86			
cM capacity (veh/h)	157	487	911			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	209	125	424	629
Volume Left	13	125	0	0
Volume Right	196	0	0	22
cSH	431	911	1700	1700
Volume to Capacity	0.49	0.14	0.25	0.37
Queue Length 95th (m)	20.7	3.8	0.0	0.0
Control Delay (s)	21.0	9.6	0.0	0.0
Lane LOS	C	A		
Approach Delay (s)	21.0	2.2		0.0
Approach LOS	C			

Intersection Summary				
Average Delay		4.0		
Intersection Capacity Utilization		58.7%	ICU Level of Service	B
Analysis Period (min)		15		

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	11	63	27	517	782	22
Future Volume (vph)	11	63	27	517	782	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	20.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		15.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.885				0.996	
Flt Protected	0.993		0.950			
Satd. Flow (prot)	1539	0	1583	1727	1832	0
Flt Permitted	0.993		0.950			
Satd. Flow (perm)	1539	0	1583	1727	1832	0
Link Speed (k/h)	50			50	60	
Link Distance (m)	1002.3			98.3	419.5	
Travel Time (s)	72.2			7.1	25.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	10%	14%	10%	3%	13%
Adj. Flow (vph)	12	68	29	562	850	24
Shared Lane Traffic (%)						
Lane Group Flow (vph)	80	0	29	562	874	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	53.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	11	63	27	517	782	22
Future Volume (Veh/h)	11	63	27	517	782	22
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	12	68	29	562	850	24
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				98		
pX, platoon unblocked	0.83					
vC, conflicting volume	1482	862	874			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1478	862	874			
tC, single (s)	6.4	6.3	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.4	2.3			
p0 queue free %	89	80	96			
cM capacity (veh/h)	112	343	724			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	80	29	562	874
Volume Left	12	29	0	0
Volume Right	68	0	0	24
cSH	262	724	1700	1700
Volume to Capacity	0.31	0.04	0.33	0.51
Queue Length 95th (m)	10.0	1.0	0.0	0.0
Control Delay (s)	24.7	10.2	0.0	0.0
Lane LOS	C	B		
Approach Delay (s)	24.7	0.5		0.0
Approach LOS	C			

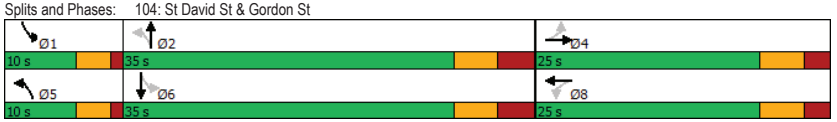
Intersection Summary				
Average Delay		1.5		
Intersection Capacity Utilization		53.7%	ICU Level of Service	A
Analysis Period (min)		15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	9	16	94	6	203	26	329	93	352	469	10
Future Volume (vph)	2	9	16	94	6	203	26	329	93	352	469	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0		0.0	25.0		0.0	20.0		0.0	25.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	20.0			70.0			60.0			15.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.98		0.99			1.00	1.00		1.00	1.00	
Frt		0.906			0.855			0.967			0.997	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1694	0	1787	1418	0	1736	1698	0	1612	1822	0
Flt Permitted	0.594			0.740			0.365			0.375		
Satd. Flow (perm)	1129	1694	0	1384	1418	0	665	1698	0	635	1822	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		17			221			24			2	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		119.1			1012.2			564.4			98.3	
Travel Time (s)		8.6			72.9			40.6			7.1	
Confl. Peds. (#/hr)			3	3			6		3	3		6
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	1%	0%	15%	4%	9%	3%	12%	4%	0%
Adj. Flow (vph)	2	10	17	102	7	221	28	358	101	383	510	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	2	27	0	102	228	0	28	459	0	383	521	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane								Yes				
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	1.0	1.0		1.0	1.0		1.0	5.0		1.0	5.0	
Minimum Split (s)	25.0	25.0		25.0	25.0		5.0	35.0		5.0	35.0	
Total Split (s)	25.0	25.0		25.0	25.0		10.0	35.0		10.0	35.0	
Total Split (%)	35.7%	35.7%		35.7%	35.7%		14.3%	50.0%		14.3%	50.0%	
Maximum Green (s)	19.0	19.0		19.0	19.0		6.0	28.0		6.0	28.0	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.0	3.8		3.0	3.8	
All-Red Time (s)	2.3	2.3		2.3	2.3		1.0	3.2		1.0	3.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		4.0	7.0		4.0	7.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	5.0		2.0	5.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)	10.0	10.0		10.0	10.0			25.0			25.0	
Flash Dont Walk (s)	8.0	8.0		8.0	8.0			14.0			14.0	
Pedestrian Calls (#/hr)	0	0		0	0			0			0	
Act Effct Green (s)	9.5	9.5		9.5	9.5		28.5	20.5		30.9	21.6	
Actuated g/C Ratio	0.18	0.18		0.18	0.18		0.53	0.38		0.58	0.40	
v/c Ratio	0.01	0.09		0.42	0.53		0.06	0.69		0.80	0.71	
Control Delay	20.0	13.8		26.7	9.1		4.7	19.5		23.1	19.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	20.0	13.8		26.7	9.1		4.7	19.5		23.1	19.6	
LOS	B	B		C	A		A	B		C	B	
Approach Delay		14.2			14.6			18.6			21.1	
Approach LOS		B			B			B			C	

Intersection Summary		
Area Type:	Other	
Cycle Length: 70		
Actuated Cycle Length: 53.6		
Natural Cycle: 65		
Control Type: Semi Act-Uncoord		
Maximum v/c Ratio: 0.80		
Intersection Signal Delay: 19.1		Intersection LOS: B
Intersection Capacity Utilization 70.5%		ICU Level of Service C
Analysis Period (min) 15		

Splits and Phases: 104: St David St & Gordon St



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	2	27	102	228	28	459	383	521
v/c Ratio	0.01	0.09	0.42	0.53	0.06	0.69	0.80	0.71
Control Delay	20.0	13.8	26.7	9.1	4.7	19.5	23.1	19.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.0	13.8	26.7	9.1	4.7	19.5	23.1	19.6
Queue Length 50th (m)	0.2	0.9	9.3	0.6	0.9	34.7	15.1	40.9
Queue Length 95th (m)	1.7	6.8	23.8	16.9	3.6	69.8	#52.6	81.2
Internal Link Dist (m)		95.1		988.2		540.4		74.3
Turn Bay Length (m)	20.0		25.0		20.0		25.0	
Base Capacity (vph)	411	627	504	656	491	922	478	981
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.00	0.04	0.20	0.35	0.06	0.50	0.80	0.53

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	9	16	94	6	203	26	329	93	352	469	10
Future Volume (vph)	2	9	16	94	6	203	26	329	93	352	469	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		4.0	7.0		4.0	7.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.98		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.91		1.00	0.85		1.00	0.97		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	1694		1779	1418		1735	1698		1611	1822	
Flt Permitted	0.59	1.00		0.74	1.00		0.36	1.00		0.37	1.00	
Satd. Flow (perm)	1129	1694		1385	1418		666	1698		636	1822	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2	10	17	102	7	221	28	358	101	383	510	11
RTOR Reduction (vph)	0	14	0	0	182	0	0	15	0	0	1	0
Lane Group Flow (vph)	2	13	0	102	46	0	28	444	0	383	520	0
Confl. Peds. (#/hr)			3	3			6		3	3		6
Heavy Vehicles (%)	0%	0%	0%	1%	0%	15%	4%	9%	3%	12%	4%	0%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	9.5	9.5		9.5	9.5		25.5	20.5		27.9	21.7	
Effective Green, g (s)	9.5	9.5		9.5	9.5		25.5	20.5		27.9	21.7	
Actuated g/C Ratio	0.18	0.18		0.18	0.18		0.48	0.39		0.52	0.41	
Clearance Time (s)	6.0	6.0		6.0	6.0		4.0	7.0		4.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	5.0		2.0	5.0	
Lane Grp Cap (vph)	201	302		247	253		419	654		447	743	
v/s Ratio Prot		0.01			0.03		0.01	0.26		c0.10	0.29	
v/s Ratio Perm	0.00			c0.07			0.03			c0.35		
v/c Ratio	0.01	0.04		0.41	0.18		0.07	0.68		0.86	0.70	
Uniform Delay, d1	18.0	18.1		19.4	18.6		7.5	13.6		9.5	13.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	0.1		1.1	0.4		0.0	3.7		14.4	3.7	
Delay (s)	18.0	18.1		20.5	18.9		7.6	17.3		23.9	16.7	
Level of Service	B	B		C	B		A	B		C	B	
Approach Delay (s)		18.1			19.4			16.7			19.8	
Approach LOS		B			B			B			B	

Intersection Summary					
HCM 2000 Control Delay	18.8	HCM 2000 Level of Service		B	
HCM 2000 Volume to Capacity ratio	0.77				
Actuated Cycle Length (s)	53.2	Sum of lost time (s)		17.0	
Intersection Capacity Utilization	70.5%	ICU Level of Service		C	
Analysis Period (min)	15				

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	125	21	70	112	64	13	315	31	32	478	30
Future Volume (vph)	44	125	21	70	112	64	13	315	31	32	478	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	15.0		0.0	20.0		0.0	20.0		0.0	20.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	50.0			30.0			30.0			30.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	0.99		0.98	0.99		1.00	1.00		0.99	1.00	
Frt		0.978			0.945			0.986			0.991	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1757	0	1770	1738	0	1543	1675	0	1543	1825	0
Flt Permitted	0.637			0.656			0.381			0.531		
Satd. Flow (perm)	1182	1757	0	1202	1738	0	618	1675	0	857	1825	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		15			50			12			8	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		1030.9			1009.0			391.9			424.5	
Travel Time (s)		74.2			72.6			28.2			30.6	
Confl. Peds. (#/hr)	3		12	12		3	1		10	10		1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	6%	0%	2%	2%	3%	17%	12%	7%	17%	3%	4%
Adj. Flow (vph)	48	136	23	76	122	70	14	342	34	35	520	33
Shared Lane Traffic (%)												
Lane Group Flow (vph)	48	159	0	76	192	0	14	376	0	35	553	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	25.0	25.0		25.0	25.0		35.0	35.0		35.0	35.0	
Total Split (s)	25.0	25.0		25.0	25.0		35.0	35.0		35.0	35.0	
Total Split (%)	41.7%	41.7%		41.7%	41.7%		58.3%	58.3%		58.3%	58.3%	
Maximum Green (s)	19.0	19.0		19.0	19.0		30.0	30.0		30.0	30.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)	10.0	10.0		10.0	10.0		20.0	20.0		20.0	20.0	
Flash Dont Walk (s)	8.0	8.0		8.0	8.0		10.0	10.0		10.0	10.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	11.5	11.5		11.4	11.4		25.1	25.1		25.1	25.1	
Actuated g/C Ratio	0.27	0.27		0.27	0.27		0.59	0.59		0.59	0.59	
v/c Ratio	0.15	0.33		0.24	0.38		0.04	0.38		0.07	0.51	
Control Delay	15.3	15.2		16.3	13.5		7.0	8.7		7.2	10.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	15.3	15.2		16.3	13.5		7.0	8.7		7.2	10.2	
LOS	B	B		B	B		A	A		A	B	
Approach Delay		15.2			14.3			8.6			10.1	
Approach LOS		B			B			A			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 42.7			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.51			
Intersection Signal Delay: 11.2		Intersection LOS: B	
Intersection Capacity Utilization 55.4%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 105: St David St & Garafraxa St

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	48	159	76	192	14	376	35	553
v/c Ratio	0.15	0.33	0.24	0.38	0.04	0.38	0.07	0.51
Control Delay	15.3	15.2	16.3	13.5	7.0	8.7	7.2	10.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.3	15.2	16.3	13.5	7.0	8.7	7.2	10.2
Queue Length 50th (m)	2.8	8.8	4.5	8.7	0.5	16.4	1.3	27.3
Queue Length 95th (m)	10.8	25.4	15.4	26.5	3.0	40.7	5.6	65.0
Internal Link Dist (m)		1006.9		985.0		367.9		400.5
Turn Bay Length (m)	15.0		20.0		20.0		20.0	
Base Capacity (vph)	555	833	565	843	455	1236	631	1346
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.19	0.13	0.23	0.03	0.30	0.06	0.41

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	125	21	70	112	64	13	315	31	32	478	30
Future Volume (vph)	44	125	21	70	112	64	13	315	31	32	478	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		0.99	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.95		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1765	1759		1749	1740		1542	1676		1536	1825	
Flt Permitted	0.64	1.00		0.66	1.00		0.38	1.00		0.53	1.00	
Satd. Flow (perm)	1183	1759		1208	1740		618	1676		858	1825	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	48	136	23	76	122	70	14	342	34	35	520	33
RTOR Reduction (vph)	0	12	0	0	39	0	0	6	0	0	4	0
Lane Group Flow (vph)	48	147	0	76	153	0	14	370	0	35	549	0
Confl. Peds. (#/hr)	3		12	12		3	1		10	10		1
Heavy Vehicles (%)	2%	6%	0%	2%	2%	3%	17%	12%	7%	17%	3%	4%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	9.2	9.2		9.2	9.2		23.6	23.6		23.6	23.6	
Effective Green, g (s)	9.2	9.2		9.2	9.2		23.6	23.6		23.6	23.6	
Actuated g/C Ratio	0.21	0.21		0.21	0.21		0.54	0.54		0.54	0.54	
Clearance Time (s)	6.0	6.0		6.0	6.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)	248	369		253	365		332	903		462	983	
v/s Ratio Prot		0.08			c0.09			0.22			c0.30	
v/s Ratio Perm	0.04			0.06			0.02			0.04		
v/c Ratio	0.19	0.40		0.30	0.42		0.04	0.41		0.08	0.56	
Uniform Delay, d1	14.2	14.9		14.6	15.0		4.8	6.0		4.9	6.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.8	1.5		1.4	1.6		0.1	0.6		0.1	1.2	
Delay (s)	15.0	16.4		16.0	16.6		4.9	6.6		5.0	7.8	
Level of Service	B	B		B	B		A	A		A	A	
Approach Delay (s)		16.1			16.4			6.6			7.7	
Approach LOS		B			B			A			A	

Intersection Summary				
HCM 2000 Control Delay	10.2	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.52			
Actuated Cycle Length (s)	43.8	Sum of lost time (s)	11.0	
Intersection Capacity Utilization	55.4%	ICU Level of Service	B	
Analysis Period (min)	15			

c Critical Lane Group

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	25	147	146	505	312	25
Future Volume (vph)	25	147	146	505	312	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	115.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		100.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.884				0.990	
Flt Protected	0.993		0.950			
Satd. Flow (prot)	1668	0	1805	1881	1814	0
Flt Permitted	0.993		0.950			
Satd. Flow (perm)	1668	0	1805	1881	1814	0
Link Speed (k/h)	80			80	80	
Link Distance (m)	1005.9			726.4	1036.6	
Travel Time (s)	45.3			32.7	46.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	1%	4%	0%
Adj. Flow (vph)	27	160	159	549	339	27
Shared Lane Traffic (%)						
Lane Group Flow (vph)	187	0	159	549	366	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	46.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	25	147	146	505	312	25
Future Volume (Veh/h)	25	147	146	505	312	25
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	27	160	159	549	339	27
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1220	352	366			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1220	352	366			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	85	77	87			
cM capacity (veh/h)	174	696	1204			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	187	159	549	366
Volume Left	27	159	0	0
Volume Right	160	0	0	27
cSH	486	1204	1700	1700
Volume to Capacity	0.38	0.13	0.32	0.22
Queue Length 95th (m)	14.3	3.6	0.0	0.0
Control Delay (s)	17.0	8.4	0.0	0.0
Lane LOS	C	A		
Approach Delay (s)	17.0	1.9		0.0
Approach LOS	C			

Intersection Summary				
Average Delay		3.6		
Intersection Capacity Utilization		46.5%	ICU Level of Service	A
Analysis Period (min)		15		

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	6	162	157	667	467	11
Future Volume (vph)	6	162	157	667	467	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	110.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		75.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.870				0.997	
Flt Protected	0.998		0.950			
Satd. Flow (prot)	1650	0	1787	1881	1840	0
Flt Permitted	0.998		0.950			
Satd. Flow (perm)	1650	0	1787	1881	1840	0
Link Speed (k/h)	50			60	60	
Link Distance (m)	1004.3			419.5	285.9	
Travel Time (s)	72.3			25.2	17.2	
Confl. Peds. (#/hr)			3			3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	1%	1%	3%	0%
Adj. Flow (vph)	7	176	171	725	508	12
Shared Lane Traffic (%)						
Lane Group Flow (vph)	183	0	171	725	520	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	54.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	6	162	157	667	467	11
Future Volume (Veh/h)	6	162	157	667	467	11
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	7	176	171	725	508	12
Pedestrians	3					
Lane Width (m)	3.6					
Walking Speed (m/s)	1.2					
Percent Blockage	0					
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1584	517	523			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1584	517	523			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	93	69	84			
cM capacity (veh/h)	101	561	1046			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	183	171	725	520
Volume Left	7	171	0	0
Volume Right	176	0	0	12
cSH	477	1046	1700	1700
Volume to Capacity	0.38	0.16	0.43	0.31
Queue Length 95th (m)	14.2	4.7	0.0	0.0
Control Delay (s)	17.2	9.1	0.0	0.0
Lane LOS	C	A		
Approach Delay (s)	17.2	1.7		0.0
Approach LOS	C			

Intersection Summary				
Average Delay		2.9		
Intersection Capacity Utilization		54.3%	ICU Level of Service	A
Analysis Period (min)		15		

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	23	76	91	865	639	61
Future Volume (vph)	23	76	91	865	639	61
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	20.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		15.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.896				0.988	
Flt Protected	0.989		0.950			
Satd. Flow (prot)	1526	0	1583	1720	1793	0
Flt Permitted	0.989		0.950			
Satd. Flow (perm)	1526	0	1583	1720	1793	0
Link Speed (k/h)	50			50	60	
Link Distance (m)	1002.3			98.3	419.5	
Travel Time (s)	72.2			7.1	25.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	10%	14%	10%	3%	13%
Bus Blockages (#/hr)	6	1	0	1	2	0
Adj. Flow (vph)	25	83	99	940	695	66
Shared Lane Traffic (%)						
Lane Group Flow (vph)	108	0	99	940	761	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.03	1.00	1.00	1.01	1.01	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	58.3%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	23	76	91	865	639	61
Future Volume (Veh/h)	23	76	91	865	639	61
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	25	83	99	940	695	66
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				98		
pX, platoon unblocked	0.67					
vC, conflicting volume	1866	728	761			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2042	728	761			
tC, single (s)	6.4	6.3	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.4	2.3			
p0 queue free %	33	80	88			
cM capacity (veh/h)	37	410	800			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	108	99	940	761
Volume Left	25	99	0	0
Volume Right	83	0	0	66
cSH	123	800	1700	1700
Volume to Capacity	0.88	0.12	0.55	0.45
Queue Length 95th (m)	43.9	3.4	0.0	0.0
Control Delay (s)	117.4	10.1	0.0	0.0
Lane LOS	F	B		
Approach Delay (s)	117.4	1.0		0.0
Approach LOS	F			

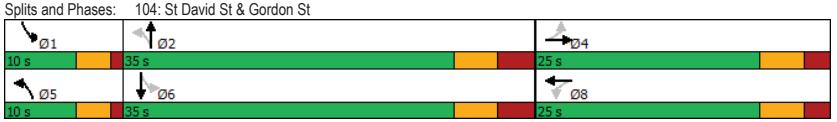
Intersection Summary				
Average Delay		7.2		
Intersection Capacity Utilization		58.3%	ICU Level of Service	B
Analysis Period (min)		15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	32	39	89	116	60	379	125	528	118	259	429	16
Future Volume (vph)	32	39	89	116	60	379	125	528	118	259	429	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0		0.0	25.0		0.0	20.0		0.0	25.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	20.0			70.0			60.0			15.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.98		0.99			1.00	1.00		1.00	1.00	
Frt		0.895			0.870			0.973			0.995	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1649	0	1736	1634	0	1805	1805	0	1736	1836	0
Flt Permitted	0.312			0.668			0.387			0.168		
Satd. Flow (perm)	593	1649	0	1207	1634	0	734	1805	0	307	1836	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		97			326			19			3	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		119.1			1012.2			564.4			98.3	
Travel Time (s)		8.6			72.9			40.6			7.1	
Confl. Peds. (#/hr)			7	7			4		3	3		4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	1%	4%	2%	1%	0%	2%	2%	4%	3%	0%
Adj. Flow (vph)	35	42	97	126	65	412	136	574	128	282	466	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	35	139	0	126	477	0	136	702	0	282	483	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane								Yes				
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	1.0	1.0		1.0	1.0		1.0	5.0		1.0	5.0	
Minimum Split (s)	25.0	25.0		25.0	25.0		5.0	35.0		5.0	35.0	
Total Split (s)	25.0	25.0		25.0	25.0		10.0	35.0		10.0	35.0	
Total Split (%)	35.7%	35.7%		35.7%	35.7%		14.3%	50.0%		14.3%	50.0%	
Maximum Green (s)	19.0	19.0		19.0	19.0		6.0	28.0		6.0	28.0	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.0	3.8		3.0	3.8	
All-Red Time (s)	2.3	2.3		2.3	2.3		1.0	3.2		1.0	3.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		4.0	7.0		4.0	7.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	5.0		2.0	5.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)	10.0	10.0		10.0	10.0			25.0			25.0	
Flash Dont Walk (s)	8.0	8.0		8.0	8.0			14.0			14.0	
Pedestrian Calls (#/hr)	0	0		0	0			0			0	
Act Effct Green (s)	12.8	12.8		12.8	12.8		36.3	27.6		37.1	28.0	
Actuated g/C Ratio	0.20	0.20		0.20	0.20		0.57	0.43		0.58	0.44	
v/c Ratio	0.30	0.34		0.52	0.81		0.26	0.88		0.90	0.60	
Control Delay	27.8	10.7		30.5	19.7		7.0	33.4		45.2	18.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	27.8	10.7		30.5	19.7		7.0	33.4		45.2	18.5	
LOS	C	B		C	B		A	C		D	B	
Approach Delay		14.1			22.0			29.1			28.3	
Approach LOS		B			C			C			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 63.6			
Natural Cycle: 80			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.90			
Intersection Signal Delay: 26.0		Intersection LOS: C	
Intersection Capacity Utilization 98.4%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 104: St David St & Gordon St



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	35	139	126	477	136	702	282	483
v/c Ratio	0.30	0.34	0.52	0.81	0.26	0.88	0.90	0.60
Control Delay	27.8	10.7	30.5	19.7	7.0	33.4	45.2	18.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.8	10.7	30.5	19.7	7.0	33.4	45.2	18.5
Queue Length 50th (m)	3.7	4.3	14.1	16.7	5.4	72.7	13.0	42.6
Queue Length 95th (m)	11.3	16.9	28.8	49.3	14.6	#160.5	#65.2	83.7
Internal Link Dist (m)		95.1		988.2		540.4		74.3
Turn Bay Length (m)	20.0		25.0		20.0		25.0	
Base Capacity (vph)	178	564	363	720	525	811	315	819
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.20	0.25	0.35	0.66	0.26	0.87	0.90	0.59

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	32	39	89	116	60	379	125	528	118	259	429	16
Future Volume (vph)	32	39	89	116	60	379	125	528	118	259	429	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		4.0	7.0		4.0	7.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.98		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		0.99	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.90		1.00	0.87		1.00	0.97		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	1651		1718	1635		1804	1804		1735	1835	
Flt Permitted	0.31	1.00		0.67	1.00		0.39	1.00		0.17	1.00	
Satd. Flow (perm)	594	1651		1208	1635		735	1804		307	1835	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	35	42	97	126	65	412	136	574	128	282	466	17
RTOR Reduction (vph)	0	77	0	0	260	0	0	11	0	0	2	0
Lane Group Flow (vph)	35	62	0	126	217	0	136	691	0	282	481	0
Confl. Peds. (#/hr)			7	7			4		3	3		4
Heavy Vehicles (%)	0%	0%	1%	4%	2%	1%	0%	2%	2%	4%	3%	0%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	12.8	12.8		12.8	12.8		33.4	27.7		34.0	28.0	
Effective Green, g (s)	12.8	12.8		12.8	12.8		33.4	27.7		34.0	28.0	
Actuated g/C Ratio	0.20	0.20		0.20	0.20		0.53	0.44		0.54	0.44	
Clearance Time (s)	6.0	6.0		6.0	6.0		4.0	7.0		4.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	5.0		2.0	5.0	
Lane Grp Cap (vph)	119	332		243	329		482	786		299	809	
v/s Ratio Prot		0.04			c0.13		0.03	0.38		c0.09	0.26	
v/s Ratio Perm	0.06			0.10			0.12			c0.42		
v/c Ratio	0.29	0.19		0.52	0.66		0.28	0.88		0.94	0.59	
Uniform Delay, d1	21.5	21.0		22.6	23.3		8.0	16.4		11.6	13.5	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.4	0.3		1.9	4.7		0.1	11.9		36.6	1.8	
Delay (s)	22.9	21.3		24.5	28.1		8.1	28.2		48.2	15.2	
Level of Service	C	C		C	C		A	C		D	B	
Approach Delay (s)		21.6			27.3			25.0			27.4	
Approach LOS		C			C			C			C	

Intersection Summary				
HCM 2000 Control Delay	26.1	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.87			
Actuated Cycle Length (s)	63.5	Sum of lost time (s)	17.0	
Intersection Capacity Utilization	98.4%	ICU Level of Service	F	
Analysis Period (min)	15			

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	94	138	12	70	111	66	9	560	44	42	493	32
Future Volume (vph)	94	138	12	70	111	66	9	560	44	42	493	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	15.0		0.0	20.0		0.0	20.0		0.0	20.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	50.0			30.0			30.0			30.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		0.99			0.99	1.00		1.00	1.00	
Frt		0.988			0.944			0.989			0.991	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1787	1789	0	1752	1737	0	1597	1837	0	1805	1824	0
Flt Permitted	0.636			0.654			0.372			0.308		
Satd. Flow (perm)	1196	1789	0	1190	1737	0	621	1837	0	583	1824	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8			52			9			8	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		1030.9			1009.0			391.9			424.5	
Travel Time (s)		74.2			72.6			28.2			30.6	
Confl. Peds. (#/hr)			10	10			19		11	11		19
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	5%	0%	3%	1%	7%	13%	2%	3%	0%	3%	3%
Adj. Flow (vph)	102	150	13	76	121	72	10	609	48	46	536	35
Shared Lane Traffic (%)												
Lane Group Flow (vph)	102	163	0	76	193	0	10	657	0	46	571	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	25.0	25.0		25.0	25.0		35.0	35.0		35.0	35.0	
Total Split (s)	25.0	25.0		25.0	25.0		35.0	35.0		35.0	35.0	
Total Split (%)	41.7%	41.7%		41.7%	41.7%		58.3%	58.3%		58.3%	58.3%	
Maximum Green (s)	19.0	19.0		19.0	19.0		30.0	30.0		30.0	30.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)	10.0	10.0		10.0	10.0		20.0	20.0		20.0	20.0	
Flash Dont Walk (s)	8.0	8.0		8.0	8.0		10.0	10.0		10.0	10.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	11.8	11.8		11.7	11.7		27.6	27.6		27.6	27.6	
Actuated g/C Ratio	0.26	0.26		0.26	0.26		0.61	0.61		0.61	0.61	
v/c Ratio	0.33	0.34		0.25	0.40		0.03	0.59		0.13	0.51	
Control Delay	18.8	17.0		17.6	14.4		6.8	11.2		8.0	10.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	18.8	17.0		17.6	14.4		6.8	11.2		8.0	10.1	
LOS	B	B		B	B		A	B		A	B	
Approach Delay		17.7			15.3			11.2			9.9	
Approach LOS		B			B			B			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 45.3			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.59			
Intersection Signal Delay: 12.3		Intersection LOS: B	
Intersection Capacity Utilization 64.1%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 105: St David St & Garafraxa St

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	102	163	76	193	10	657	46	571
v/c Ratio	0.33	0.34	0.25	0.40	0.03	0.59	0.13	0.51
Control Delay	18.8	17.0	17.6	14.4	6.8	11.2	8.0	10.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.8	17.0	17.6	14.4	6.8	11.2	8.0	10.1
Queue Length 50th (m)	7.0	10.6	5.1	9.6	0.4	36.4	1.8	29.6
Queue Length 95th (m)	19.8	26.6	15.4	26.6	2.5	84.5	7.6	68.6
Internal Link Dist (m)		1006.9		985.0		367.9		400.5
Turn Bay Length (m)	15.0		20.0		20.0		20.0	
Base Capacity (vph)	531	799	528	800	434	1289	408	1279
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.19	0.20	0.14	0.24	0.02	0.51	0.11	0.45

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	94	138	12	70	111	66	9	560	44	42	493	32
Future Volume (vph)	94	138	12	70	111	66	9	560	44	42	493	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		0.99	1.00		0.99	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.94		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1787	1790		1734	1737		1588	1837		1800	1824	
Flt Permitted	0.64	1.00		0.65	1.00		0.37	1.00		0.31	1.00	
Satd. Flow (perm)	1197	1790		1194	1737		622	1837		583	1824	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	102	150	13	76	121	72	10	609	48	46	536	35
RTOR Reduction (vph)	0	6	0	0	41	0	0	4	0	0	4	0
Lane Group Flow (vph)	102	157	0	76	152	0	10	653	0	46	567	0
Confl. Peds. (#/hr)			10	10			19		11	11		19
Heavy Vehicles (%)	1%	5%	0%	3%	1%	7%	13%	2%	3%	0%	3%	3%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	9.4	9.4		9.4	9.4		26.0	26.0		26.0	26.0	
Effective Green, g (s)	9.4	9.4		9.4	9.4		26.0	26.0		26.0	26.0	
Actuated g/C Ratio	0.20	0.20		0.20	0.20		0.56	0.56		0.56	0.56	
Clearance Time (s)	6.0	6.0		6.0	6.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)	242	362		241	351		348	1029		326	1022	
v/s Ratio Prot		c0.09			0.09			c0.36			0.31	
v/s Ratio Perm	0.09			0.06			0.02			0.08		
v/c Ratio	0.42	0.43		0.32	0.43		0.03	0.63		0.14	0.56	
Uniform Delay, d1	16.1	16.2		15.8	16.2		4.6	7.0		4.9	6.5	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.5	1.7		1.6	1.8		0.1	1.8		0.4	1.1	
Delay (s)	18.6	17.9		17.3	17.9		4.6	8.8		5.3	7.6	
Level of Service	B	B		B	B		A	A		A	A	
Approach Delay (s)		18.2			17.8			8.7			7.5	
Approach LOS		B			B			A			A	

Intersection Summary				
HCM 2000 Control Delay	11.0	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.58			
Actuated Cycle Length (s)	46.4	Sum of lost time (s)	11.0	
Intersection Capacity Utilization	64.1%	ICU Level of Service	C	
Analysis Period (min)	15			

c Critical Lane Group

Appendix F3

2040 Background Operation Synchro Reports

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	25	139	126	279	453	27
Future Volume (vph)	25	139	126	279	453	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	115.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		100.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.885				0.992	
Flt Protected	0.992		0.950			
Satd. Flow (prot)	1587	0	1770	1667	1812	0
Flt Permitted	0.992		0.950			
Satd. Flow (perm)	1587	0	1770	1667	1812	0
Link Speed (k/h)	80			80	80	
Link Distance (m)	1005.9			726.4	1036.6	
Travel Time (s)	45.3			32.7	46.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	6%	2%	14%	4%	4%
Adj. Flow (vph)	27	151	137	303	492	29
Shared Lane Traffic (%)						
Lane Group Flow (vph)	178	0	137	303	521	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	52.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	25	139	126	279	453	27
Future Volume (Veh/h)	25	139	126	279	453	27
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	27	151	137	303	492	29
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1084	506	521			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1084	506	521			
tC, single (s)	6.4	6.3	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.4	2.2			
p0 queue free %	87	73	87			
cM capacity (veh/h)	211	558	1045			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	178	137	303	521
Volume Left	27	137	0	0
Volume Right	151	0	0	29
cSH	446	1045	1700	1700
Volume to Capacity	0.40	0.13	0.18	0.31
Queue Length 95th (m)	15.1	3.6	0.0	0.0
Control Delay (s)	18.3	9.0	0.0	0.0
Lane LOS	C	A		
Approach Delay (s)	18.3	2.8		0.0
Approach LOS	C			

Intersection Summary			
Average Delay	3.9		
Intersection Capacity Utilization	52.4%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	13	188	120	407	579	21
Future Volume (vph)	13	188	120	407	579	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	110.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		75.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.874				0.995	
Flt Protected	0.997		0.950			
Satd. Flow (prot)	1610	0	1626	1712	1774	0
Flt Permitted	0.997		0.950			
Satd. Flow (perm)	1610	0	1626	1712	1774	0
Link Speed (k/h)	50			60	60	
Link Distance (m)	1004.3			419.5	285.9	
Travel Time (s)	72.3			25.2	17.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	3%	11%	11%	6%	22%
Adj. Flow (vph)	14	204	130	442	629	23
Shared Lane Traffic (%)						
Lane Group Flow (vph)	218	0	130	442	652	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 60.7%		ICU Level of Service B	
Analysis Period (min) 15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	13	188	120	407	579	21
Future Volume (Veh/h)	13	188	120	407	579	21
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	14	204	130	442	629	23
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1342	640	652			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1342	640	652			
tC, single (s)	6.4	6.2	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.3			
p0 queue free %	90	57	85			
cM capacity (veh/h)	145	473	893			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	218	130	442	652
Volume Left	14	130	0	0
Volume Right	204	0	0	23
cSH	413	893	1700	1700
Volume to Capacity	0.53	0.15	0.26	0.38
Queue Length 95th (m)	23.9	4.1	0.0	0.0
Control Delay (s)	23.1	9.7	0.0	0.0
Lane LOS	C	A		
Approach Delay (s)	23.1	2.2		0.0
Approach LOS	C			

Intersection Summary			
Average Delay	4.4		
Intersection Capacity Utilization	60.7%	ICU Level of Service	B
Analysis Period (min)	15		

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	11	66	28	539	810	20
Future Volume (vph)	11	66	28	539	810	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	20.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		15.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.884				0.997	
Flt Protected	0.993		0.950			
Satd. Flow (prot)	1536	0	1583	1727	1835	0
Flt Permitted	0.993		0.950			
Satd. Flow (perm)	1536	0	1583	1727	1835	0
Link Speed (k/h)	50			50	60	
Link Distance (m)	1002.3			98.3	419.5	
Travel Time (s)	72.2			7.1	25.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	10%	14%	10%	3%	13%
Adj. Flow (vph)	12	72	30	586	880	22
Shared Lane Traffic (%)						
Lane Group Flow (vph)	84	0	30	586	902	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	55.2%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	11	66	28	539	810	20
Future Volume (Veh/h)	11	66	28	539	810	20
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	12	72	30	586	880	22
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				98		
pX, platoon unblocked	0.82					
vC, conflicting volume	1537	891	902			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1545	891	902			
tC, single (s)	6.4	6.3	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.4	2.3			
p0 queue free %	88	78	96			
cM capacity (veh/h)	100	330	706			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	84	30	586	902
Volume Left	12	30	0	0
Volume Right	72	0	0	22
cSH	248	706	1700	1700
Volume to Capacity	0.34	0.04	0.34	0.53
Queue Length 95th (m)	11.5	1.1	0.0	0.0
Control Delay (s)	26.7	10.3	0.0	0.0
Lane LOS	D	B		
Approach Delay (s)	26.7	0.5		0.0
Approach LOS	D			

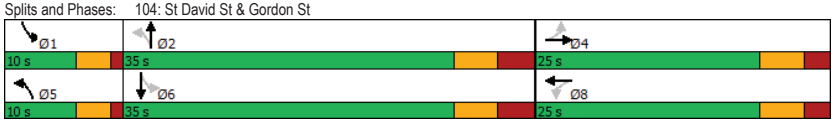
Intersection Summary				
Average Delay		1.6		
Intersection Capacity Utilization		55.2%	ICU Level of Service	B
Analysis Period (min)		15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	9	16	98	6	211	27	344	96	361	490	10
Future Volume (vph)	2	9	16	98	6	211	27	344	96	361	490	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0		0.0	25.0		0.0	20.0		0.0	25.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	20.0			70.0			60.0			15.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.98		0.99			1.00	1.00		1.00	1.00	
Frt		0.906			0.854			0.967			0.997	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1694	0	1787	1416	0	1736	1698	0	1612	1822	0
Flt Permitted	0.567			0.740			0.341			0.357		
Satd. Flow (perm)	1077	1694	0	1384	1416	0	622	1698	0	605	1822	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		17			229			24			2	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		119.1			1012.2			564.4			98.3	
Travel Time (s)		8.6			72.9			40.6			7.1	
Confl. Peds. (#/hr)			3	3			6		3	3		6
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	1%	0%	15%	4%	9%	3%	12%	4%	0%
Adj. Flow (vph)	2	10	17	107	7	229	29	374	104	392	533	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	2	27	0	107	236	0	29	478	0	392	544	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane								Yes				
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	1.0	1.0		1.0	1.0		1.0	5.0		1.0	5.0	
Minimum Split (s)	25.0	25.0		25.0	25.0		5.0	35.0		5.0	35.0	
Total Split (s)	25.0	25.0		25.0	25.0		10.0	35.0		10.0	35.0	
Total Split (%)	35.7%	35.7%		35.7%	35.7%		14.3%	50.0%		14.3%	50.0%	
Maximum Green (s)	19.0	19.0		19.0	19.0		6.0	28.0		6.0	28.0	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.0	3.8		3.0	3.8	
All-Red Time (s)	2.3	2.3		2.3	2.3		1.0	3.2		1.0	3.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		4.0	7.0		4.0	7.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	5.0		2.0	5.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)	10.0	10.0		10.0	10.0			25.0			25.0	
Flash Dont Walk (s)	8.0	8.0		8.0	8.0			14.0			14.0	
Pedestrian Calls (#/hr)	0	0		0	0			0			0	
Act Effct Green (s)	9.7	9.7		9.7	9.7		29.4	21.3		31.7	22.5	
Actuated g/C Ratio	0.18	0.18		0.18	0.18		0.54	0.39		0.58	0.41	
v/c Ratio	0.01	0.09		0.43	0.54		0.07	0.71		0.84	0.73	
Control Delay	20.0	13.7		27.3	9.1		4.8	20.0		28.0	20.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	20.0	13.7		27.3	9.1		4.8	20.0		28.0	20.3	
LOS	B	B		C	A		A	B		C	C	
Approach Delay		14.1			14.8			19.1			23.5	
Approach LOS		B			B			B			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 54.7			
Natural Cycle: 75			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.84			
Intersection Signal Delay: 20.5		Intersection LOS: C	
Intersection Capacity Utilization 72.4%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 104: St David St & Gordon St



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	2	27	107	236	29	478	392	544
v/c Ratio	0.01	0.09	0.43	0.54	0.07	0.71	0.84	0.73
Control Delay	20.0	13.7	27.3	9.1	4.8	20.0	28.0	20.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.0	13.7	27.3	9.1	4.8	20.0	28.0	20.3
Queue Length 50th (m)	0.2	0.9	10.1	0.6	0.9	37.3	16.0	44.2
Queue Length 95th (m)	1.7	6.7	24.8	17.0	3.8	74.5	#59.2	87.2
Internal Link Dist (m)		95.1		988.2		540.4		74.3
Turn Bay Length (m)	20.0		25.0		20.0		25.0	
Base Capacity (vph)	384	615	493	652	473	904	464	961
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.04	0.22	0.36	0.06	0.53	0.84	0.57

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	9	16	98	6	211	27	344	96	361	490	10
Future Volume (vph)	2	9	16	98	6	211	27	344	96	361	490	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		4.0	7.0		4.0	7.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.98		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.91		1.00	0.85		1.00	0.97		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	1694		1779	1417		1735	1698		1611	1822	
Flt Permitted	0.57	1.00		0.74	1.00		0.34	1.00		0.36	1.00	
Satd. Flow (perm)	1077	1694		1385	1417		623	1698		606	1822	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2	10	17	107	7	229	29	374	104	392	533	11
RTOR Reduction (vph)	0	14	0	0	188	0	0	15	0	0	1	0
Lane Group Flow (vph)	2	13	0	107	48	0	29	463	0	392	543	0
Confl. Peds. (#/hr)			3	3			6		3	3		6
Heavy Vehicles (%)	0%	0%	0%	1%	0%	15%	4%	9%	3%	12%	4%	0%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	9.7	9.7		9.7	9.7		26.3	21.3		28.7	22.5	
Effective Green, g (s)	9.7	9.7		9.7	9.7		26.3	21.3		28.7	22.5	
Actuated g/C Ratio	0.18	0.18		0.18	0.18		0.49	0.39		0.53	0.42	
Clearance Time (s)	6.0	6.0		6.0	6.0		4.0	7.0		4.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	5.0		2.0	5.0	
Lane Grp Cap (vph)	192	303		247	253		404	667		435	756	
v/s Ratio Prot		0.01			0.03		0.01	0.27		c0.10	0.30	
v/s Ratio Perm	0.00			c0.08			0.03			c0.37		
v/c Ratio	0.01	0.04		0.43	0.19		0.07	0.69		0.90	0.72	
Uniform Delay, d1	18.3	18.4		19.8	18.9		7.6	13.7		10.1	13.2	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	0.1		1.2	0.4		0.0	4.0		21.0	4.1	
Delay (s)	18.3	18.5		21.0	19.3		7.6	17.7		31.1	17.3	
Level of Service	B	B		C	B		A	B		C	B	
Approach Delay (s)		18.5			19.8			17.1			23.1	
Approach LOS		B			B			B			C	

Intersection Summary				
HCM 2000 Control Delay	20.7	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.81			
Actuated Cycle Length (s)	54.2	Sum of lost time (s)	17.0	
Intersection Capacity Utilization	72.4%	ICU Level of Service	C	
Analysis Period (min)	15			

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	46	131	22	74	118	67	14	329	33	34	500	32
Future Volume (vph)	46	131	22	74	118	67	14	329	33	34	500	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	15.0		0.0	20.0		0.0	20.0		0.0	20.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	50.0			30.0			30.0			30.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	0.99		0.98	0.99		1.00	1.00		0.99	1.00	
Frt		0.978			0.946			0.986			0.991	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1757	0	1770	1740	0	1543	1675	0	1543	1825	0
Flt Permitted	0.632			0.652			0.362			0.513		
Satd. Flow (perm)	1173	1757	0	1195	1740	0	588	1675	0	829	1825	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		15			50			12			8	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		1030.9			1009.0			391.9			424.5	
Travel Time (s)		74.2			72.6			28.2			30.6	
Confl. Peds. (#/hr)	3		12	12		3	1		10	10		1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	6%	0%	2%	2%	3%	17%	12%	7%	17%	3%	4%
Adj. Flow (vph)	50	142	24	80	128	73	15	358	36	37	543	35
Shared Lane Traffic (%)												
Lane Group Flow (vph)	50	166	0	80	201	0	15	394	0	37	578	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	25.0	25.0		25.0	25.0		35.0	35.0		35.0	35.0	
Total Split (s)	25.0	25.0		25.0	25.0		35.0	35.0		35.0	35.0	
Total Split (%)	41.7%	41.7%		41.7%	41.7%		58.3%	58.3%		58.3%	58.3%	
Maximum Green (s)	19.0	19.0		19.0	19.0		30.0	30.0		30.0	30.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)	10.0	10.0		10.0	10.0		20.0	20.0		20.0	20.0	
Flash Dont Walk (s)	8.0	8.0		8.0	8.0		10.0	10.0		10.0	10.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	11.8	11.8		11.7	11.7		26.3	26.3		26.3	26.3	
Actuated g/C Ratio	0.27	0.27		0.26	0.26		0.59	0.59		0.59	0.59	
v/c Ratio	0.16	0.35		0.25	0.41		0.04	0.39		0.08	0.53	
Control Delay	15.7	15.7		16.9	14.1		7.1	8.9		7.3	10.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	15.7	15.7		16.9	14.1		7.1	8.9		7.3	10.6	
LOS	B	B		B	B		A	A		A	B	
Approach Delay		15.7			14.9			8.8			10.4	
Approach LOS		B			B			A			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 44.4			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.53			
Intersection Signal Delay: 11.6		Intersection LOS: B	
Intersection Capacity Utilization 57.1%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 105: St David St & Garafraxa St

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	50	166	80	201	15	394	37	578
v/c Ratio	0.16	0.35	0.25	0.41	0.04	0.39	0.08	0.53
Control Delay	15.7	15.7	16.9	14.1	7.1	8.9	7.3	10.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.7	15.7	16.9	14.1	7.1	8.9	7.3	10.6
Queue Length 50th (m)	3.0	9.6	5.0	9.6	0.6	17.9	1.4	30.0
Queue Length 95th (m)	11.1	26.4	16.1	27.9	3.3	43.8	6.0	70.3
Internal Link Dist (m)		1006.9		985.0		367.9		400.5
Turn Bay Length (m)	15.0		20.0		20.0		20.0	
Base Capacity (vph)	525	795	535	807	415	1188	586	1293
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.21	0.15	0.25	0.04	0.33	0.06	0.45

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	46	131	22	74	118	67	14	329	33	34	500	32
Future Volume (vph)	46	131	22	74	118	67	14	329	33	34	500	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		0.99	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.95		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1765	1759		1748	1740		1542	1676		1536	1825	
Flt Permitted	0.63	1.00		0.65	1.00		0.36	1.00		0.51	1.00	
Satd. Flow (perm)	1173	1759		1200	1740		587	1676		829	1825	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	50	142	24	80	128	73	15	358	36	37	543	35
RTOR Reduction (vph)	0	12	0	0	39	0	0	5	0	0	4	0
Lane Group Flow (vph)	50	154	0	80	162	0	15	389	0	37	574	0
Confl. Peds. (#/hr)	3		12	12		3	1		10	10		1
Heavy Vehicles (%)	2%	6%	0%	2%	2%	3%	17%	12%	7%	17%	3%	4%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	9.6	9.6		9.6	9.6		24.9	24.9		24.9	24.9	
Effective Green, g (s)	9.6	9.6		9.6	9.6		24.9	24.9		24.9	24.9	
Actuated g/C Ratio	0.21	0.21		0.21	0.21		0.55	0.55		0.55	0.55	
Clearance Time (s)	6.0	6.0		6.0	6.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)	247	371		253	367		321	917		453	998	
v/s Ratio Prot		0.09			c0.09			0.23			c0.31	
v/s Ratio Perm	0.04			0.07			0.03			0.04		
v/c Ratio	0.20	0.42		0.32	0.44		0.05	0.42		0.08	0.58	
Uniform Delay, d1	14.8	15.5		15.2	15.6		4.8	6.1		4.9	6.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.8	1.6		1.5	1.8		0.1	0.7		0.2	1.3	
Delay (s)	15.6	17.1		16.7	17.4		4.9	6.7		5.0	8.1	
Level of Service	B	B		B	B		A	A		A	A	
Approach Delay (s)		16.8			17.2			6.7			7.9	
Approach LOS		B			B			A			A	

Intersection Summary				
HCM 2000 Control Delay	10.5	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.54			
Actuated Cycle Length (s)	45.5	Sum of lost time (s)	11.0	
Intersection Capacity Utilization	57.1%	ICU Level of Service	B	
Analysis Period (min)	15			

c Critical Lane Group

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	26	154	152	526	326	26
Future Volume (vph)	26	154	152	526	326	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	115.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		100.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.884				0.990	
Flt Protected	0.993		0.950			
Satd. Flow (prot)	1668	0	1805	1881	1814	0
Flt Permitted	0.993		0.950			
Satd. Flow (perm)	1668	0	1805	1881	1814	0
Link Speed (k/h)	80			80	80	
Link Distance (m)	1005.9			726.4	1036.6	
Travel Time (s)	45.3			32.7	46.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	1%	4%	0%
Adj. Flow (vph)	28	167	165	572	354	28
Shared Lane Traffic (%)						
Lane Group Flow (vph)	195	0	165	572	382	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	48.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	26	154	152	526	326	26
Future Volume (Veh/h)	26	154	152	526	326	26
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	28	167	165	572	354	28
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1270	368	382			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1270	368	382			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	83	76	86			
cM capacity (veh/h)	161	682	1188			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	195	165	572	382
Volume Left	28	165	0	0
Volume Right	167	0	0	28
cSH	466	1188	1700	1700
Volume to Capacity	0.42	0.14	0.34	0.22
Queue Length 95th (m)	16.3	3.9	0.0	0.0
Control Delay (s)	18.2	8.5	0.0	0.0
Lane LOS	C	A		
Approach Delay (s)	18.2	1.9		0.0
Approach LOS	C			

Intersection Summary				
Average Delay		3.8		
Intersection Capacity Utilization		48.1%	ICU Level of Service	A
Analysis Period (min)		15		

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	6	170	164	694	487	12
Future Volume (vph)	6	170	164	694	487	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	110.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		75.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.870				0.997	
Flt Protected	0.998		0.950			
Satd. Flow (prot)	1650	0	1787	1881	1840	0
Flt Permitted	0.998		0.950			
Satd. Flow (perm)	1650	0	1787	1881	1840	0
Link Speed (k/h)	50			60	60	
Link Distance (m)	1004.3			419.5	285.9	
Travel Time (s)	72.3			25.2	17.2	
Confl. Peds. (#/hr)			3			3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	1%	1%	3%	0%
Adj. Flow (vph)	7	185	178	754	529	13
Shared Lane Traffic (%)						
Lane Group Flow (vph)	192	0	178	754	542	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	56.3%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	6	170	164	694	487	12
Future Volume (Veh/h)	6	170	164	694	487	12
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	7	185	178	754	529	13
Pedestrians	3					
Lane Width (m)	3.6					
Walking Speed (m/s)	1.2					
Percent Blockage	0					
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1648	538	545			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1648	538	545			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	92	66	83			
cM capacity (veh/h)	91	545	1027			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	192	178	754	542
Volume Left	7	178	0	0
Volume Right	185	0	0	13
cSH	461	1027	1700	1700
Volume to Capacity	0.42	0.17	0.44	0.32
Queue Length 95th (m)	16.1	5.0	0.0	0.0
Control Delay (s)	18.3	9.2	0.0	0.0
Lane LOS	C	A		
Approach Delay (s)	18.3	1.8		0.0
Approach LOS	C			

Intersection Summary				
Average Delay		3.1		
Intersection Capacity Utilization		56.3%	ICU Level of Service	B
Analysis Period (min)		15		

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	24	80	95	898	664	64
Future Volume (vph)	24	80	95	898	664	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	20.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		15.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.896				0.988	
Flt Protected	0.989		0.950			
Satd. Flow (prot)	1526	0	1583	1720	1793	0
Flt Permitted	0.989		0.950			
Satd. Flow (perm)	1526	0	1583	1720	1793	0
Link Speed (k/h)	50			50	60	
Link Distance (m)	1002.3			98.3	419.5	
Travel Time (s)	72.2			7.1	25.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	10%	14%	10%	3%	13%
Bus Blockages (#/hr)	6	1	0	1	2	0
Adj. Flow (vph)	26	87	103	976	722	70
Shared Lane Traffic (%)						
Lane Group Flow (vph)	113	0	103	976	792	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.03	1.00	1.00	1.01	1.01	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	60.4%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	24	80	95	898	664	64
Future Volume (Veh/h)	24	80	95	898	664	64
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	26	87	103	976	722	70
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				98		
pX, platoon unblocked	0.65					
vC, conflicting volume	1939	757	792			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2179	757	792			
tC, single (s)	6.4	6.3	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.4	2.3			
p0 queue free %	10	78	87			
cM capacity (veh/h)	29	395	778			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	113	103	976	792
Volume Left	26	103	0	0
Volume Right	87	0	0	70
cSH	101	778	1700	1700
Volume to Capacity	1.12	0.13	0.57	0.47
Queue Length 95th (m)	58.5	3.6	0.0	0.0
Control Delay (s)	204.9	10.3	0.0	0.0
Lane LOS	F	B		
Approach Delay (s)	204.9	1.0		0.0
Approach LOS	F			

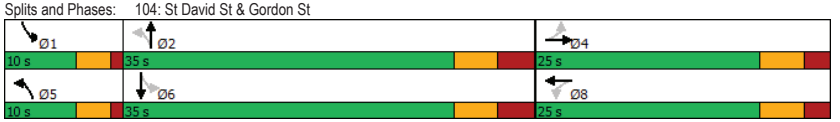
Intersection Summary				
Average Delay	12.2			
Intersection Capacity Utilization	60.4%	ICU Level of Service		B
Analysis Period (min)	15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	41	94	121	63	392	131	551	123	270	446	16
Future Volume (vph)	34	41	94	121	63	392	131	551	123	270	446	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0		0.0	25.0		0.0	20.0		0.0	25.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	20.0			70.0			60.0			15.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.98		0.99			1.00	1.00		1.00	1.00	
Frt		0.896			0.871			0.973			0.995	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1652	0	1736	1636	0	1805	1805	0	1736	1836	0
Flt Permitted	0.296			0.663			0.365			0.140		
Satd. Flow (perm)	562	1652	0	1198	1636	0	692	1805	0	256	1836	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		102			315			19			3	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		119.1			1012.2			564.4			98.3	
Travel Time (s)		8.6			72.9			40.6			7.1	
Confl. Peds. (#/hr)			7	7			4		3	3		4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	1%	4%	2%	1%	0%	2%	2%	4%	3%	0%
Adj. Flow (vph)	37	45	102	132	68	426	142	599	134	293	485	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	37	147	0	132	494	0	142	733	0	293	502	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane								Yes				
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	1.0	1.0		1.0	1.0		1.0	5.0		1.0	5.0	
Minimum Split (s)	25.0	25.0		25.0	25.0		5.0	35.0		5.0	35.0	
Total Split (s)	25.0	25.0		25.0	25.0		10.0	35.0		10.0	35.0	
Total Split (%)	35.7%	35.7%		35.7%	35.7%		14.3%	50.0%		14.3%	50.0%	
Maximum Green (s)	19.0	19.0		19.0	19.0		6.0	28.0		6.0	28.0	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.0	3.8		3.0	3.8	
All-Red Time (s)	2.3	2.3		2.3	2.3		1.0	3.2		1.0	3.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		4.0	7.0		4.0	7.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	5.0		2.0	5.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)	10.0	10.0		10.0	10.0			25.0			25.0	
Flash Dont Walk (s)	8.0	8.0		8.0	8.0			14.0			14.0	
Pedestrian Calls (#/hr)	0	0		0	0			0			0	
Act Effct Green (s)	13.5	13.5		13.5	13.5		36.9	28.2		37.6	28.6	
Actuated g/C Ratio	0.21	0.21		0.21	0.21		0.57	0.44		0.58	0.44	
v/c Ratio	0.32	0.35		0.53	0.84		0.29	0.92		1.02	0.62	
Control Delay	28.6	10.5		30.5	22.8		7.5	38.7		78.5	19.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	28.6	10.5		30.5	22.8		7.5	38.7		78.5	19.3	
LOS	C	B		C	C		A	D		E	B	
Approach Delay		14.1			24.4			33.7			41.1	
Approach LOS		B			C			C			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 64.8			
Natural Cycle: 80			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 1.02			
Intersection Signal Delay: 32.3		Intersection LOS: C	
Intersection Capacity Utilization 101.5%		ICU Level of Service G	
Analysis Period (min) 15			

Splits and Phases: 104: St David St & Gordon St



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	37	147	132	494	142	733	293	502
v/c Ratio	0.32	0.35	0.53	0.84	0.29	0.92	1.02	0.62
Control Delay	28.6	10.5	30.5	22.8	7.5	38.7	78.5	19.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.6	10.5	30.5	22.8	7.5	38.7	78.5	19.3
Queue Length 50th (m)	4.0	4.6	14.9	20.1	6.2	83.1	~23.9	47.7
Queue Length 95th (m)	11.9	17.6	30.2	#57.1	15.2	#170.5	#76.4	87.9
Internal Link Dist (m)		95.1		988.2		540.4		74.3
Turn Bay Length (m)	20.0		25.0		20.0		25.0	
Base Capacity (vph)	165	559	353	704	501	795	286	811
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.22	0.26	0.37	0.70	0.28	0.92	1.02	0.62

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	41	94	121	63	392	131	551	123	270	446	16
Future Volume (vph)	34	41	94	121	63	392	131	551	123	270	446	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		4.0	7.0		4.0	7.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.98		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		0.99	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.90		1.00	0.87		1.00	0.97		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	1653		1718	1636		1804	1804		1735	1836	
Flt Permitted	0.30	1.00		0.66	1.00		0.37	1.00		0.14	1.00	
Satd. Flow (perm)	563	1653		1200	1636		694	1804		256	1836	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	37	45	102	132	68	426	142	599	134	293	485	17
RTOR Reduction (vph)	0	81	0	0	249	0	0	11	0	0	2	0
Lane Group Flow (vph)	37	66	0	132	245	0	142	722	0	293	500	0
Confl. Peds. (#/hr)			7	7			4		3	3		4
Heavy Vehicles (%)	0%	0%	1%	4%	2%	1%	0%	2%	2%	4%	3%	0%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	13.5	13.5		13.5	13.5		33.9	28.2		34.5	28.5	
Effective Green, g (s)	13.5	13.5		13.5	13.5		33.9	28.2		34.5	28.5	
Actuated g/C Ratio	0.21	0.21		0.21	0.21		0.52	0.44		0.53	0.44	
Clearance Time (s)	6.0	6.0		6.0	6.0		4.0	7.0		4.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	5.0		2.0	5.0	
Lane Grp Cap (vph)	117	344		250	341		461	786		273	808	
v/s Ratio Prot		0.04			c0.15		0.03	0.40		c0.10	0.27	
v/s Ratio Perm	0.07			0.11			0.13			c0.47		
v/c Ratio	0.32	0.19		0.53	0.72		0.31	0.92		1.07	0.62	
Uniform Delay, d1	21.7	21.1		22.8	23.8		8.4	17.2		13.5	13.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.6	0.3		2.0	7.0		0.1	16.3		75.3	2.0	
Delay (s)	23.2	21.4		24.8	30.9		8.5	33.5		88.8	16.0	
Level of Service	C	C		C	C		A	C		F	B	
Approach Delay (s)		21.8			29.6			29.4			42.8	
Approach LOS		C			C			C			D	

Intersection Summary				
HCM 2000 Control Delay	33.2	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.98			
Actuated Cycle Length (s)	64.7	Sum of lost time (s)	17.0	
Intersection Capacity Utilization	101.5%	ICU Level of Service	G	
Analysis Period (min)	15			

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	98	145	13	74	117	69	9	586	46	45	515	34
Future Volume (vph)	98	145	13	74	117	69	9	586	46	45	515	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	15.0		0.0	20.0		0.0	20.0		0.0	20.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	50.0			30.0			30.0			30.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		0.99			0.99	1.00		1.00	1.00	
Frt		0.988			0.944			0.989			0.991	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1787	1789	0	1752	1738	0	1597	1837	0	1805	1824	0
Flt Permitted	0.631			0.649			0.353			0.288		
Satd. Flow (perm)	1187	1789	0	1181	1738	0	589	1837	0	545	1824	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8			52			9			8	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		1030.9			1009.0			391.9			424.5	
Travel Time (s)		74.2			72.6			28.2			30.6	
Confl. Peds. (#/hr)			10	10			19		11	11		19
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	5%	0%	3%	1%	7%	13%	2%	3%	0%	3%	3%
Adj. Flow (vph)	107	158	14	80	127	75	10	637	50	49	560	37
Shared Lane Traffic (%)												
Lane Group Flow (vph)	107	172	0	80	202	0	10	687	0	49	597	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	25.0	25.0		25.0	25.0		35.0	35.0		35.0	35.0	
Total Split (s)	25.0	25.0		25.0	25.0		35.0	35.0		35.0	35.0	
Total Split (%)	41.7%	41.7%		41.7%	41.7%		58.3%	58.3%		58.3%	58.3%	
Maximum Green (s)	19.0	19.0		19.0	19.0		30.0	30.0		30.0	30.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)	10.0	10.0		10.0	10.0		20.0	20.0		20.0	20.0	
Flash Dont Walk (s)	8.0	8.0		8.0	8.0		10.0	10.0		10.0	10.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	12.1	12.1		12.0	12.0		28.8	28.8		28.8	28.8	
Actuated g/C Ratio	0.26	0.26		0.25	0.25		0.61	0.61		0.61	0.61	
v/c Ratio	0.35	0.37		0.27	0.42		0.03	0.61		0.15	0.53	
Control Delay	19.5	17.5		18.1	15.0		6.9	11.9		8.4	10.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	19.5	17.5		18.1	15.0		6.9	11.9		8.4	10.5	
LOS	B	B		B	B		A	B		A	B	
Approach Delay		18.3			15.9			11.8			10.3	
Approach LOS		B			B			B			B	

Intersection Summary		
Area Type:	Other	
Cycle Length: 60		
Actuated Cycle Length: 47.1		
Natural Cycle: 60		
Control Type: Semi Act-Uncoord		
Maximum v/c Ratio: 0.61		
Intersection Signal Delay: 12.9		Intersection LOS: B
Intersection Capacity Utilization 67.4%		ICU Level of Service C
Analysis Period (min) 15		

Splits and Phases: 105: St David St & Garafraxa St

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	107	172	80	202	10	687	49	597
v/c Ratio	0.35	0.37	0.27	0.42	0.03	0.61	0.15	0.53
Control Delay	19.5	17.5	18.1	15.0	6.9	11.9	8.4	10.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.5	17.5	18.1	15.0	6.9	11.9	8.4	10.5
Queue Length 50th (m)	7.8	11.9	5.7	10.8	0.4	40.4	2.0	32.6
Queue Length 95th (m)	20.6	28.0	16.1	27.8	2.5	92.8	8.2	74.7
Internal Link Dist (m)		1006.9		985.0		367.9		400.5
Turn Bay Length (m)	15.0		20.0		20.0		20.0	
Base Capacity (vph)	497	754	495	758	390	1219	360	1209
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.22	0.23	0.16	0.27	0.03	0.56	0.14	0.49

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	98	145	13	74	117	69	9	586	46	45	515	34
Future Volume (vph)	98	145	13	74	117	69	9	586	46	45	515	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		0.99	1.00		0.99	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.94		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1787	1790		1734	1738		1588	1837		1800	1824	
Flt Permitted	0.63	1.00		0.65	1.00		0.35	1.00		0.29	1.00	
Satd. Flow (perm)	1187	1790		1184	1738		590	1837		545	1824	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	107	158	14	80	127	75	10	637	50	49	560	37
RTOR Reduction (vph)	0	6	0	0	41	0	0	4	0	0	3	0
Lane Group Flow (vph)	107	166	0	80	161	0	10	683	0	49	594	0
Confl. Peds. (#/hr)			10	10			19		11	11		19
Heavy Vehicles (%)	1%	5%	0%	3%	1%	7%	13%	2%	3%	0%	3%	3%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	9.9	9.9		9.9	9.9		27.5	27.5		27.5	27.5	
Effective Green, g (s)	9.9	9.9		9.9	9.9		27.5	27.5		27.5	27.5	
Actuated g/C Ratio	0.20	0.20		0.20	0.20		0.57	0.57		0.57	0.57	
Clearance Time (s)	6.0	6.0		6.0	6.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)	242	366		242	355		335	1043		309	1036	
v/s Ratio Prot		c0.09			0.09			c0.37			0.33	
v/s Ratio Perm	0.09			0.07			0.02			0.09		
v/c Ratio	0.44	0.45		0.33	0.45		0.03	0.65		0.16	0.57	
Uniform Delay, d1	16.8	16.9		16.4	16.9		4.6	7.2		5.0	6.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.7	1.9		1.7	1.9		0.1	2.0		0.5	1.2	
Delay (s)	19.5	18.7		18.1	18.8		4.7	9.2		5.5	7.9	
Level of Service	B	B		B	B		A	A		A	A	
Approach Delay (s)		19.0			18.6			9.1			7.7	
Approach LOS		B			B			A			A	

Intersection Summary					
HCM 2000 Control Delay	11.5	HCM 2000 Level of Service	B		
HCM 2000 Volume to Capacity ratio	0.60				
Actuated Cycle Length (s)	48.4	Sum of lost time (s)	11.0		
Intersection Capacity Utilization	67.4%	ICU Level of Service	C		
Analysis Period (min)	15				

c Critical Lane Group

Appendix G1

2030 Total Operation Synchro Reports

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	22	136	130	307	447	24
Future Volume (vph)	22	136	130	307	447	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	115.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		100.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.884				0.993	
Flt Protected	0.993		0.950			
Satd. Flow (prot)	1586	0	1770	1667	1814	0
Flt Permitted	0.993		0.950			
Satd. Flow (perm)	1586	0	1770	1667	1814	0
Link Speed (k/h)	80			80	80	
Link Distance (m)	1005.9			640.4	1036.6	
Travel Time (s)	45.3			28.8	46.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	6%	2%	14%	4%	4%
Adj. Flow (vph)	24	148	141	334	486	26
Shared Lane Traffic (%)						
Lane Group Flow (vph)	172	0	141	334	512	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	51.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	22	136	130	307	447	24
Future Volume (Veh/h)	22	136	130	307	447	24
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	24	148	141	334	486	26
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1115	499	512			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1115	499	512			
tC, single (s)	6.4	6.3	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.4	2.2			
p0 queue free %	88	74	87			
cM capacity (veh/h)	201	564	1053			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	172	141	334	512
Volume Left	24	141	0	0
Volume Right	148	0	0	26
cSH	450	1053	1700	1700
Volume to Capacity	0.38	0.13	0.20	0.30
Queue Length 95th (m)	14.1	3.7	0.0	0.0
Control Delay (s)	17.9	8.9	0.0	0.0
Lane LOS	C	A		
Approach Delay (s)	17.9	2.7		0.0
Approach LOS	C			

Intersection Summary				
Average Delay		3.7		
Intersection Capacity Utilization		51.8%	ICU Level of Service	A
Analysis Period (min)		15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	4	173	87	7	51	110	374	44	26	538	19
Future Volume (vph)	12	4	173	87	7	51	110	374	44	26	538	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	110.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	1		0	0		0
Taper Length (m)	7.5			7.5			75.0			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.876			0.953			0.984			0.996	
Flt Protected		0.997			0.971		0.950				0.998	
Satd. Flow (prot)	0	1614	0	0	1724	0	1626	1699	0	0	1776	0
Flt Permitted		0.997			0.971		0.950				0.998	
Satd. Flow (perm)	0	1614	0	0	1724	0	1626	1699	0	0	1776	0
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		1004.3			182.5			419.5			285.9	
Travel Time (s)		72.3			13.1			25.2			17.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	2%	3%	2%	2%	2%	11%	11%	2%	2%	6%	22%
Adj. Flow (vph)	13	4	188	95	8	55	120	407	48	28	585	21
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	205	0	0	158	0	120	455	0	0	634	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	84.6%	ICU Level of Service	E
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	4	173	87	7	51	110	374	44	26	538	19
Future Volume (Veh/h)	12	4	173	87	7	51	110	374	44	26	538	19
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	13	4	188	95	8	55	120	407	48	28	585	21
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1358	1346	596	1512	1333	431	606			455		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1358	1346	596	1512	1333	431	606			455		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.2			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.3			2.2		
p0 queue free %	87	97	63	0	94	91	87			97		
cM capacity (veh/h)	98	128	502	53	131	624	930			1106		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1
Volume Total	205	158	120	455	634
Volume Left	13	95	120	0	28
Volume Right	188	55	0	48	21
cSH	381	82	930	1700	1106
Volume to Capacity	0.54	1.94	0.13	0.27	0.03
Queue Length 95th (m)	24.6	110.7	3.5	0.0	0.6
Control Delay (s)	24.9	547.8	9.4	0.0	0.7
Lane LOS	C	F	A		A
Approach Delay (s)	24.9	547.8	2.0		0.7
Approach LOS	C	F			

Intersection Summary					
Average Delay		59.3			
Intersection Capacity Utilization		84.6%	ICU Level of Service		E
Analysis Period (min)		15			

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	14	61	25	536	835	28
Future Volume (vph)	14	61	25	536	835	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	20.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		15.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.890				0.996	
Flt Protected	0.991		0.950			
Satd. Flow (prot)	1550	0	1583	1727	1832	0
Flt Permitted	0.991		0.950			
Satd. Flow (perm)	1550	0	1583	1727	1832	0
Link Speed (k/h)	50			50	60	
Link Distance (m)	1002.3			98.3	419.5	
Travel Time (s)	72.2			7.1	25.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	10%	14%	10%	3%	13%
Adj. Flow (vph)	15	66	27	583	908	30
Shared Lane Traffic (%)						
Lane Group Flow (vph)	81	0	27	583	938	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	56.8%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	14	61	25	536	835	28
Future Volume (Veh/h)	14	61	25	536	835	28
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	15	66	27	583	908	30
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				98		
pX, platoon unblocked	0.83					
vC, conflicting volume	1560	923	938			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1572	923	938			
tC, single (s)	6.4	6.3	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.4	2.3			
p0 queue free %	85	79	96			
cM capacity (veh/h)	98	316	684			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	81	27	583	938
Volume Left	15	27	0	0
Volume Right	66	0	0	30
cSH	224	684	1700	1700
Volume to Capacity	0.36	0.04	0.34	0.55
Queue Length 95th (m)	12.5	1.0	0.0	0.0
Control Delay (s)	29.9	10.5	0.0	0.0
Lane LOS	D	B		
Approach Delay (s)	29.9	0.5		0.0
Approach LOS	D			

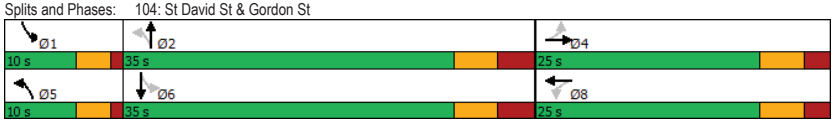
Intersection Summary				
Average Delay		1.7		
Intersection Capacity Utilization		56.8%	ICU Level of Service	B
Analysis Period (min)		15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	8	15	90	5	220	24	330	90	395	478	9
Future Volume (vph)	2	8	15	90	5	220	24	330	90	395	478	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0		0.0	25.0		0.0	20.0		0.0	25.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	20.0			70.0			60.0			15.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.98		0.99			1.00	1.00		1.00	1.00	
Frt		0.904			0.853			0.968			0.997	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1689	0	1787	1413	0	1736	1699	0	1612	1822	0
Flt Permitted	0.549			0.741			0.358			0.380		
Satd. Flow (perm)	1043	1689	0	1386	1413	0	653	1699	0	644	1822	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		16			239			23			2	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		119.1			1012.2			564.4			98.3	
Travel Time (s)		8.6			72.9			40.6			7.1	
Confl. Peds. (#/hr)			3	3			6		3	3		6
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	1%	0%	15%	4%	9%	3%	12%	4%	0%
Adj. Flow (vph)	2	9	16	98	5	239	26	359	98	429	520	10
Shared Lane Traffic (%)												
Lane Group Flow (vph)	2	25	0	98	244	0	26	457	0	429	530	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane								Yes				
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	1.0	1.0		1.0	1.0		1.0	5.0		1.0	5.0	
Minimum Split (s)	25.0	25.0		25.0	25.0		5.0	35.0		5.0	35.0	
Total Split (s)	25.0	25.0		25.0	25.0		10.0	35.0		10.0	35.0	
Total Split (%)	35.7%	35.7%		35.7%	35.7%		14.3%	50.0%		14.3%	50.0%	
Maximum Green (s)	19.0	19.0		19.0	19.0		6.0	28.0		6.0	28.0	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.0	3.8		3.0	3.8	
All-Red Time (s)	2.3	2.3		2.3	2.3		1.0	3.2		1.0	3.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		4.0	7.0		4.0	7.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	5.0		2.0	5.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)	10.0	10.0		10.0	10.0			25.0			25.0	
Flash Dont Walk (s)	8.0	8.0		8.0	8.0			14.0			14.0	
Pedestrian Calls (#/hr)	0	0		0	0			0			0	
Act Effct Green (s)	9.3	9.3		9.3	9.3		28.9	20.8		31.3	22.0	
Actuated g/C Ratio	0.17	0.17		0.17	0.17		0.54	0.39		0.58	0.41	
v/c Ratio	0.01	0.08		0.41	0.55		0.06	0.68		0.88	0.71	
Control Delay	20.5	14.0		26.8	9.2		4.6	18.9		32.1	19.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	20.5	14.0		26.8	9.2		4.6	18.9		32.1	19.4	
LOS	C	B		C	A		A	B		C	B	
Approach Delay		14.4			14.3			18.1			25.1	
Approach LOS		B			B			B			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 53.8			
Natural Cycle: 75			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.88			
Intersection Signal Delay: 21.0		Intersection LOS: C	
Intersection Capacity Utilization 73.7%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 104: St David St & Gordon St



Queues
104: St David St & Gordon St

Total - 2030
AM Peak Hour

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	2	25	98	244	26	457	429	530
v/c Ratio	0.01	0.08	0.41	0.55	0.06	0.68	0.88	0.71
Control Delay	20.5	14.0	26.8	9.2	4.6	18.9	32.1	19.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.5	14.0	26.8	9.2	4.6	18.9	32.1	19.4
Queue Length 50th (m)	0.2	0.8	9.0	0.4	0.8	34.3	17.3	41.6
Queue Length 95th (m)	1.7	6.3	23.0	17.2	3.3	68.8	#66.6	82.3
Internal Link Dist (m)		95.1		988.2		540.4		74.3
Turn Bay Length (m)	20.0		25.0		20.0		25.0	
Base Capacity (vph)	378	623	502	665	489	919	485	977
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.04	0.20	0.37	0.05	0.50	0.88	0.54

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis
104: St David St & Gordon St

Total - 2030
AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	8	15	90	5	220	24	330	90	395	478	9
Future Volume (vph)	2	8	15	90	5	220	24	330	90	395	478	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		4.0	7.0		4.0	7.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.98		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.90		1.00	0.85		1.00	0.97		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	1691		1779	1413		1735	1699		1611	1822	
Flt Permitted	0.55	1.00		0.74	1.00		0.36	1.00		0.38	1.00	
Satd. Flow (perm)	1042	1691		1388	1413		653	1699		645	1822	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2	9	16	98	5	239	26	359	98	429	520	10
RTOR Reduction (vph)	0	13	0	0	197	0	0	14	0	0	1	0
Lane Group Flow (vph)	2	12	0	98	47	0	26	443	0	429	529	0
Confl. Peds. (#/hr)			3	3			6		3	3		6
Heavy Vehicles (%)	0%	0%	0%	1%	0%	15%	4%	9%	3%	12%	4%	0%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	9.3	9.3		9.3	9.3		25.8	20.8		28.2	22.0	
Effective Green, g (s)	9.3	9.3		9.3	9.3		25.8	20.8		28.2	22.0	
Actuated g/C Ratio	0.17	0.17		0.17	0.17		0.48	0.39		0.53	0.41	
Clearance Time (s)	6.0	6.0		6.0	6.0		4.0	7.0		4.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	5.0		2.0	5.0	
Lane Grp Cap (vph)	181	295		242	246		417	663		453	752	
v/s Ratio Prot		0.01			0.03		0.01	0.26		c0.11	0.29	
v/s Ratio Perm	0.00			c0.07			0.02			c0.39		
v/c Ratio	0.01	0.04		0.40	0.19		0.06	0.67		0.95	0.70	
Uniform Delay, d1	18.2	18.3		19.5	18.8		7.4	13.4		10.6	12.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	0.1		1.1	0.4		0.0	3.4		28.7	3.8	
Delay (s)	18.2	18.3		20.7	19.2		7.5	16.8		39.3	16.7	
Level of Service	B	B		C	B		A	B		D	B	
Approach Delay (s)		18.3			19.6			16.3			26.8	
Approach LOS		B			B			B			C	

Intersection Summary				
HCM 2000 Control Delay	22.5	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.84			
Actuated Cycle Length (s)	53.3	Sum of lost time (s)	17.0	
Intersection Capacity Utilization	73.7%	ICU Level of Service	D	
Analysis Period (min)	15			

c Critical Lane Group

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	23	159	154	538	362	23
Future Volume (vph)	23	159	154	538	362	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	115.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		100.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.882				0.992	
Flt Protected	0.994		0.950			
Satd. Flow (prot)	1666	0	1805	1881	1816	0
Flt Permitted	0.994		0.950			
Satd. Flow (perm)	1666	0	1805	1881	1816	0
Link Speed (k/h)	80			80	80	
Link Distance (m)	1005.9			641.1	1036.6	
Travel Time (s)	45.3			28.8	46.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	1%	4%	0%
Adj. Flow (vph)	25	173	167	585	393	25
Shared Lane Traffic (%)						
Lane Group Flow (vph)	198	0	167	585	418	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 50.1%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	23	159	154	538	362	23
Future Volume (Veh/h)	23	159	154	538	362	23
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	25	173	167	585	393	25
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1324	406	418			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1324	406	418			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	83	73	86			
cM capacity (veh/h)	148	650	1152			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	198	167	585	418
Volume Left	25	167	0	0
Volume Right	173	0	0	25
cSH	456	1152	1700	1700
Volume to Capacity	0.43	0.14	0.34	0.25
Queue Length 95th (m)	17.3	4.1	0.0	0.0
Control Delay (s)	18.8	8.7	0.0	0.0
Lane LOS	C	A		
Approach Delay (s)	18.8	1.9		0.0
Approach LOS	C			

Intersection Summary			
Average Delay	3.8		
Intersection Capacity Utilization	50.1%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	9	155	87	6	64	150	622	123	74	437	11
Future Volume (vph)	5	9	155	87	6	64	150	622	123	74	437	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	110.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	1		0	0		0
Taper Length (m)	7.5			7.5			75.0			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.876			0.945			0.975			0.997	
Flt Protected		0.999			0.973		0.950				0.993	
Satd. Flow (prot)	0	1661	0	0	1713	0	1787	1831	0	0	1830	0
Flt Permitted		0.999			0.973		0.950				0.993	
Satd. Flow (perm)	0	1661	0	0	1713	0	1787	1831	0	0	1830	0
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		1004.3			251.3			419.5			285.9	
Travel Time (s)		72.3			18.1			25.2			17.2	
Confl. Peds. (#/hr)							3					3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	2%	0%	2%	2%	2%	1%	1%	2%	2%	3%	0%
Adj. Flow (vph)	5	10	168	95	7	70	163	676	134	80	475	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	183	0	0	172	0	163	810	0	0	567	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	100.7%	ICU Level of Service G	
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	9	155	87	6	64	150	622	123	74	437	11
Future Volume (Veh/h)	5	9	155	87	6	64	150	622	123	74	437	11
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	10	168	95	7	70	163	676	134	80	475	12
Pedestrians		3										
Lane Width (m)		3.6										
Walking Speed (m/s)		1.2										
Percent Blockage		0										
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1720	1780	484	1883	1719	743	490			810		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1720	1780	484	1883	1719	743	490			810		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	89	84	71	0	90	83	85			90		
cM capacity (veh/h)	45	63	585	28	68	415	1076			816		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1
Volume Total	183	172	163	810	567
Volume Left	5	95	163	0	80
Volume Right	168	70	0	134	12
cSH	328	47	1076	1700	816
Volume to Capacity	0.56	3.69	0.15	0.48	0.10
Queue Length 95th (m)	25.8	Err	4.3	0.0	2.6
Control Delay (s)	29.0	Err	8.9	0.0	2.6
Lane LOS	D	F	A		A
Approach Delay (s)	29.0	Err	1.5		2.6
Approach LOS	D	F			

Intersection Summary					
Average Delay		911.9			
Intersection Capacity Utilization		100.7%	ICU Level of Service		G
Analysis Period (min)		15			

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	31	73	87	929	685	64
Future Volume (vph)	31	73	87	929	685	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	20.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		15.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.906				0.988	
Flt Protected	0.985		0.950			
Satd. Flow (prot)	1547	0	1583	1720	1793	0
Flt Permitted	0.985		0.950			
Satd. Flow (perm)	1547	0	1583	1720	1793	0
Link Speed (k/h)	50			50	60	
Link Distance (m)	1002.3			98.3	419.5	
Travel Time (s)	72.2			7.1	25.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	10%	14%	10%	3%	13%
Bus Blockages (#/hr)	6	1	0	1	2	0
Adj. Flow (vph)	34	79	95	1010	745	70
Shared Lane Traffic (%)						
Lane Group Flow (vph)	113	0	95	1010	815	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.03	1.00	1.00	1.01	1.01	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	61.8%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	31	73	87	929	685	64
Future Volume (Veh/h)	31	73	87	929	685	64
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	34	79	95	1010	745	70
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				98		
pX, platoon unblocked	0.63					
vC, conflicting volume	1980	780	815			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2257	780	815			
tC, single (s)	6.4	6.3	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.4	2.3			
p0 queue free %	0	79	88			
cM capacity (veh/h)	26	383	762			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	113	95	1010	815
Volume Left	34	95	0	0
Volume Right	79	0	0	70
cSH	73	762	1700	1700
Volume to Capacity	1.54	0.12	0.59	0.48
Queue Length 95th (m)	75.5	3.4	0.0	0.0
Control Delay (s)	395.9	10.4	0.0	0.0
Lane LOS	F	B		
Approach Delay (s)	395.9	0.9		0.0
Approach LOS	F			

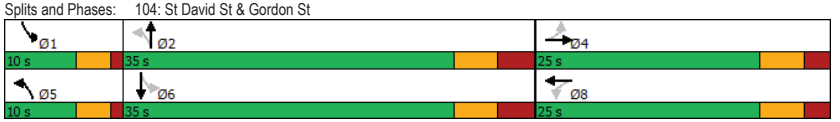
Intersection Summary				
Average Delay		22.5		
Intersection Capacity Utilization		61.8%	ICU Level of Service	B
Analysis Period (min)		15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	31	37	85	112	57	402	119	568	113	274	456	15
Future Volume (vph)	31	37	85	112	57	402	119	568	113	274	456	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0		0.0	25.0		0.0	20.0		0.0	25.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	20.0			70.0			60.0			15.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.98		0.99			1.00	1.00		1.00	1.00	
Frt		0.895			0.869			0.975			0.995	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1649	0	1736	1633	0	1805	1809	0	1736	1836	0
Flt Permitted	0.292			0.673			0.356			0.140		
Satd. Flow (perm)	555	1649	0	1216	1633	0	675	1809	0	256	1836	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		92			308			17			3	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		119.1			1012.2			564.4			98.3	
Travel Time (s)		8.6			72.9			40.6			7.1	
Confl. Peds. (#/hr)			7	7			4		3	3		4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	1%	4%	2%	1%	0%	2%	2%	4%	3%	0%
Adj. Flow (vph)	34	40	92	122	62	437	129	617	123	298	496	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	34	132	0	122	499	0	129	740	0	298	512	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane								Yes				
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	1.0	1.0		1.0	1.0		1.0	5.0		1.0	5.0	
Minimum Split (s)	25.0	25.0		25.0	25.0		5.0	35.0		5.0	35.0	
Total Split (s)	25.0	25.0		25.0	25.0		10.0	35.0		10.0	35.0	
Total Split (%)	35.7%	35.7%		35.7%	35.7%		14.3%	50.0%		14.3%	50.0%	
Maximum Green (s)	19.0	19.0		19.0	19.0		6.0	28.0		6.0	28.0	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.0	3.8		3.0	3.8	
All-Red Time (s)	2.3	2.3		2.3	2.3		1.0	3.2		1.0	3.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		4.0	7.0		4.0	7.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	5.0		2.0	5.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)	10.0	10.0		10.0	10.0			25.0			25.0	
Flash Dont Walk (s)	8.0	8.0		8.0	8.0			14.0			14.0	
Pedestrian Calls (#/hr)	0	0		0	0			0			0	
Act Effct Green (s)	13.7	13.7		13.7	13.7		36.8	28.2		37.6	28.6	
Actuated g/C Ratio	0.21	0.21		0.21	0.21		0.57	0.43		0.58	0.44	
v/c Ratio	0.29	0.31		0.48	0.85		0.27	0.93		1.05	0.63	
Control Delay	27.6	10.4		28.4	24.3		7.5	40.7		84.5	19.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	27.6	10.4		28.4	24.3		7.5	40.7		84.5	19.8	
LOS	C	B		C	C		A	D		F	B	
Approach Delay		13.9			25.1			35.7			43.6	
Approach LOS		B			C			D			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 65			
Natural Cycle: 80			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 1.05			
Intersection Signal Delay: 34.2		Intersection LOS: C	
Intersection Capacity Utilization 102.3%		ICU Level of Service G	
Analysis Period (min) 15			

Splits and Phases: 104: St David St & Gordon St



Queues
104: St David St & Gordon St

Total - 2030
PM Peak Hour

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	34	132	122	499	129	740	298	512
v/c Ratio	0.29	0.31	0.48	0.85	0.27	0.93	1.05	0.63
Control Delay	27.6	10.4	28.4	24.3	7.5	40.7	84.5	19.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.6	10.4	28.4	24.3	7.5	40.7	84.5	19.8
Queue Length 50th (m)	3.6	4.1	13.6	21.6	5.9	86.8	~26.4	50.2
Queue Length 95th (m)	11.2	16.4	27.9	#63.8	13.9	#173.0	#78.2	90.5
Internal Link Dist (m)		95.1		988.2		540.4		74.3
Turn Bay Length (m)	20.0		25.0		20.0		25.0	
Base Capacity (vph)	163	549	357	697	491	793	285	808
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.21	0.24	0.34	0.72	0.26	0.93	1.05	0.63

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis
104: St David St & Gordon St

Total - 2030
PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	31	37	85	112	57	402	119	568	113	274	456	15
Future Volume (vph)	31	37	85	112	57	402	119	568	113	274	456	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		4.0	7.0		4.0	7.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.98		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		0.99	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.90		1.00	0.87		1.00	0.98		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	1651		1717	1632		1804	1810		1735	1836	
Flt Permitted	0.29	1.00		0.67	1.00		0.36	1.00		0.14	1.00	
Satd. Flow (perm)	555	1651		1216	1632		677	1810		255	1836	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	34	40	92	122	62	437	129	617	123	298	496	16
RTOR Reduction (vph)	0	73	0	0	243	0	0	10	0	0	2	0
Lane Group Flow (vph)	34	59	0	122	256	0	129	730	0	298	510	0
Confl. Peds. (#/hr)			7	7			4		3	3		4
Heavy Vehicles (%)	0%	0%	1%	4%	2%	1%	0%	2%	2%	4%	3%	0%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	13.7	13.7		13.7	13.7		33.8	28.2		34.6	28.6	
Effective Green, g (s)	13.7	13.7		13.7	13.7		33.8	28.2		34.6	28.6	
Actuated g/C Ratio	0.21	0.21		0.21	0.21		0.52	0.43		0.53	0.44	
Clearance Time (s)	6.0	6.0		6.0	6.0		4.0	7.0		4.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	5.0		2.0	5.0	
Lane Grp Cap (vph)	117	348		256	344		449	786		272	809	
v/s Ratio Prot		0.04			c0.16		0.02	0.40		c0.10	0.28	
v/s Ratio Perm	0.06			0.10			0.12			c0.48		
v/c Ratio	0.29	0.17		0.48	0.74		0.29	0.93		1.10	0.63	
Uniform Delay, d1	21.5	21.0		22.5	24.0		8.5	17.4		13.7	14.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.4	0.2		1.4	8.5		0.1	17.8		82.5	2.2	
Delay (s)	22.9	21.2		23.9	32.4		8.6	35.2		96.2	16.3	
Level of Service	C	C		C	C		A	D		F	B	
Approach Delay (s)		21.5			30.7			31.2			45.7	
Approach LOS		C			C			C			D	

Intersection Summary				
HCM 2000 Control Delay	35.2	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	1.00			
Actuated Cycle Length (s)	64.9	Sum of lost time (s)	17.0	
Intersection Capacity Utilization	102.3%	ICU Level of Service	G	
Analysis Period (min)	15			

c Critical Lane Group

Appendix G2

2030 Total Operation Synchro Reports

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	23	141	135	318	463	26
Future Volume (vph)	23	141	135	318	463	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	115.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		100.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.884				0.993	
Flt Protected	0.993		0.950			
Satd. Flow (prot)	1586	0	1770	1667	1814	0
Flt Permitted	0.993		0.950			
Satd. Flow (perm)	1586	0	1770	1667	1814	0
Link Speed (k/h)	80			80	80	
Link Distance (m)	1005.9			640.4	1036.6	
Travel Time (s)	45.3			28.8	46.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	6%	2%	14%	4%	4%
Adj. Flow (vph)	25	153	147	346	503	28
Shared Lane Traffic (%)						
Lane Group Flow (vph)	178	0	147	346	531	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	53.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	23	141	135	318	463	26
Future Volume (Veh/h)	23	141	135	318	463	26
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	25	153	147	346	503	28
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1157	517	531			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1157	517	531			
tC, single (s)	6.4	6.3	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.4	2.2			
p0 queue free %	87	72	86			
cM capacity (veh/h)	188	550	1036			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	178	147	346	531
Volume Left	25	147	0	0
Volume Right	153	0	0	28
cSH	433	1036	1700	1700
Volume to Capacity	0.41	0.14	0.20	0.31
Queue Length 95th (m)	15.8	3.9	0.0	0.0
Control Delay (s)	19.0	9.0	0.0	0.0
Lane LOS	C	A		
Approach Delay (s)	19.0	2.7		0.0
Approach LOS	C			

Intersection Summary				
Average Delay		3.9		
Intersection Capacity Utilization		53.4%	ICU Level of Service	A
Analysis Period (min)		15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	4	180	87	7	51	115	390	44	26	558	20
Future Volume (vph)	12	4	180	87	7	51	115	390	44	26	558	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	110.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	1		0	0		0
Taper Length (m)	7.5			7.5			75.0			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.876			0.953			0.985			0.995	
Flt Protected		0.997			0.971		0.950				0.998	
Satd. Flow (prot)	0	1614	0	0	1724	0	1626	1700	0	0	1774	0
Flt Permitted		0.997			0.971		0.950				0.998	
Satd. Flow (perm)	0	1614	0	0	1724	0	1626	1700	0	0	1774	0
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		1004.3			182.5			419.5			285.9	
Travel Time (s)		72.3			13.1			25.2			17.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	2%	3%	2%	2%	2%	11%	11%	2%	2%	6%	22%
Adj. Flow (vph)	13	4	196	95	8	55	125	424	48	28	607	22
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	213	0	0	158	0	125	472	0	0	657	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	88.4%	ICU Level of Service	E
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	4	180	87	7	51	115	390	44	26	558	20
Future Volume (Veh/h)	12	4	180	87	7	51	115	390	44	26	558	20
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	13	4	196	95	8	55	125	424	48	28	607	22
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1407	1396	618	1570	1383	448	629			472		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1407	1396	618	1570	1383	448	629			472		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.2			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.3			2.2		
p0 queue free %	85	97	60	0	93	91	86			97		
cM capacity (veh/h)	89	119	487	46	121	611	911			1090		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1
Volume Total	213	158	125	472	657
Volume Left	13	95	125	0	28
Volume Right	196	55	0	48	22
cSH	366	71	911	1700	1090
Volume to Capacity	0.58	2.23	0.14	0.28	0.03
Queue Length 95th (m)	28.2	118.9	3.8	0.0	0.6
Control Delay (s)	27.6	687.9	9.6	0.0	0.7
Lane LOS	D	F	A		A
Approach Delay (s)	27.6	687.9	2.0		0.7
Approach LOS	D	F			

Intersection Summary					
Average Delay		71.5			
Intersection Capacity Utilization		88.4%	ICU Level of Service		E
Analysis Period (min)		15			

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	15	63	27	557	862	29
Future Volume (vph)	15	63	27	557	862	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	20.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		15.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.891				0.996	
Flt Protected	0.991		0.950			
Satd. Flow (prot)	1552	0	1583	1727	1831	0
Flt Permitted	0.991		0.950			
Satd. Flow (perm)	1552	0	1583	1727	1831	0
Link Speed (k/h)	50			50	60	
Link Distance (m)	1002.3			98.3	419.5	
Travel Time (s)	72.2			7.1	25.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	10%	14%	10%	3%	13%
Adj. Flow (vph)	16	68	29	605	937	32
Shared Lane Traffic (%)						
Lane Group Flow (vph)	84	0	29	605	969	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	58.5%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	15	63	27	557	862	29
Future Volume (Veh/h)	15	63	27	557	862	29
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	16	68	29	605	937	32
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				98		
pX, platoon unblocked	0.82					
vC, conflicting volume	1616	953	969			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1641	953	969			
tC, single (s)	6.4	6.3	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.4	2.3			
p0 queue free %	82	78	96			
cM capacity (veh/h)	87	304	665			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	84	29	605	969
Volume Left	16	29	0	0
Volume Right	68	0	0	32
cSH	206	665	1700	1700
Volume to Capacity	0.41	0.04	0.36	0.57
Queue Length 95th (m)	14.7	1.1	0.0	0.0
Control Delay (s)	34.0	10.7	0.0	0.0
Lane LOS	D	B		
Approach Delay (s)	34.0	0.5		0.0
Approach LOS	D			

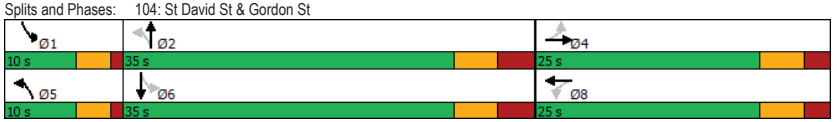
Intersection Summary				
Average Delay		1.9		
Intersection Capacity Utilization		58.5%	ICU Level of Service	B
Analysis Period (min)		15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	9	16	94	6	228	26	344	93	403	498	10
Future Volume (vph)	2	9	16	94	6	228	26	344	93	403	498	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0		0.0	25.0		0.0	20.0		0.0	25.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	20.0			70.0			60.0			15.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.98		0.99			1.00	1.00		1.00	1.00	
Frt		0.906			0.854			0.968			0.997	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1694	0	1787	1416	0	1736	1699	0	1612	1822	0
Flt Permitted	0.514			0.740			0.336			0.363		
Satd. Flow (perm)	977	1694	0	1384	1416	0	613	1699	0	615	1822	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		17			248			23			2	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		119.1			1012.2			564.4			98.3	
Travel Time (s)		8.6			72.9			40.6			7.1	
Confl. Peds. (#/hr)			3	3			6		3	3		6
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	1%	0%	15%	4%	9%	3%	12%	4%	0%
Adj. Flow (vph)	2	10	17	102	7	248	28	374	101	438	541	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	2	27	0	102	255	0	28	475	0	438	552	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane								Yes				
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	1.0	1.0		1.0	1.0		1.0	5.0		1.0	5.0	
Minimum Split (s)	25.0	25.0		25.0	25.0		5.0	35.0		5.0	35.0	
Total Split (s)	25.0	25.0		25.0	25.0		10.0	35.0		10.0	35.0	
Total Split (%)	35.7%	35.7%		35.7%	35.7%		14.3%	50.0%		14.3%	50.0%	
Maximum Green (s)	19.0	19.0		19.0	19.0		6.0	28.0		6.0	28.0	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.0	3.8		3.0	3.8	
All-Red Time (s)	2.3	2.3		2.3	2.3		1.0	3.2		1.0	3.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		4.0	7.0		4.0	7.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	5.0		2.0	5.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)	10.0	10.0		10.0	10.0			25.0			25.0	
Flash Dont Walk (s)	8.0	8.0		8.0	8.0			14.0			14.0	
Pedestrian Calls (#/hr)	0	0		0	0			0			0	
Act Effct Green (s)	9.5	9.5		9.5	9.5		29.6	21.5		31.9	22.6	
Actuated g/C Ratio	0.17	0.17		0.17	0.17		0.54	0.39		0.58	0.41	
v/c Ratio	0.01	0.09		0.42	0.56		0.06	0.70		0.93	0.73	
Control Delay	20.5	13.8		27.3	9.4		4.7	19.5		40.3	20.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	20.5	13.8		27.3	9.4		4.7	19.5		40.3	20.3	
LOS	C	B		C	A		A	B		D	C	
Approach Delay		14.3			14.5			18.7			29.2	
Approach LOS		B			B			B			C	

Intersection Summary		
Area Type:	Other	
Cycle Length: 70		
Actuated Cycle Length: 54.6		
Natural Cycle: 80		
Control Type: Semi Act-Uncoord		
Maximum v/c Ratio: 0.93		
Intersection Signal Delay: 23.3		Intersection LOS: C
Intersection Capacity Utilization 75.6%		ICU Level of Service D
Analysis Period (min) 15		

Splits and Phases: 104: St David St & Gordon St



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	2	27	102	255	28	475	438	552
v/c Ratio	0.01	0.09	0.42	0.56	0.06	0.70	0.93	0.73
Control Delay	20.5	13.8	27.3	9.4	4.7	19.5	40.3	20.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.5	13.8	27.3	9.4	4.7	19.5	40.3	20.3
Queue Length 50th (m)	0.2	0.9	9.7	0.6	0.9	36.7	18.3	44.7
Queue Length 95th (m)	1.7	6.8	23.8	17.7	3.6	73.0	#73.5	88.0
Internal Link Dist (m)		95.1		988.2		540.4		74.3
Turn Bay Length (m)	20.0		25.0		20.0		25.0	
Base Capacity (vph)	348	615	493	664	471	904	471	961
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.04	0.21	0.38	0.06	0.53	0.93	0.57

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	9	16	94	6	228	26	344	93	403	498	10
Future Volume (vph)	2	9	16	94	6	228	26	344	93	403	498	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		4.0	7.0		4.0	7.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.98		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.91		1.00	0.85		1.00	0.97		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	1694		1779	1416		1735	1700		1611	1822	
Flt Permitted	0.51	1.00		0.74	1.00		0.34	1.00		0.36	1.00	
Satd. Flow (perm)	977	1694		1385	1416		613	1700		616	1822	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2	10	17	102	7	248	28	374	101	438	541	11
RTOR Reduction (vph)	0	14	0	0	205	0	0	14	0	0	1	0
Lane Group Flow (vph)	2	13	0	102	50	0	28	461	0	438	551	0
Confl. Peds. (#/hr)			3	3			6		3	3		6
Heavy Vehicles (%)	0%	0%	0%	1%	0%	15%	4%	9%	3%	12%	4%	0%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	9.5	9.5		9.5	9.5		26.5	21.5		28.9	22.7	
Effective Green, g (s)	9.5	9.5		9.5	9.5		26.5	21.5		28.9	22.7	
Actuated g/C Ratio	0.18	0.18		0.18	0.18		0.49	0.40		0.53	0.42	
Clearance Time (s)	6.0	6.0		6.0	6.0		4.0	7.0		4.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	5.0		2.0	5.0	
Lane Grp Cap (vph)	171	296		242	248		403	674		442	763	
v/s Ratio Prot		0.01			0.04		0.01	0.27		c0.11	0.30	
v/s Ratio Perm	0.00			c0.07			0.03			c0.41		
v/c Ratio	0.01	0.04		0.42	0.20		0.07	0.68		0.99	0.72	
Uniform Delay, d1	18.5	18.6		19.9	19.1		7.5	13.5		11.3	13.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	0.1		1.2	0.4		0.0	3.7		40.2	4.1	
Delay (s)	18.5	18.6		21.1	19.5		7.5	17.2		51.5	17.3	
Level of Service	B	B		C	B		A	B		D	B	
Approach Delay (s)		18.6			20.0			16.7			32.4	
Approach LOS		B			B			B			C	

Intersection Summary				
HCM 2000 Control Delay	25.6	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.88			
Actuated Cycle Length (s)	54.2	Sum of lost time (s)	17.0	
Intersection Capacity Utilization	75.6%	ICU Level of Service	D	
Analysis Period (min)	15			

c Critical Lane Group

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	25	165	159	558	375	25
Future Volume (vph)	25	165	159	558	375	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	115.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		100.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.883				0.992	
Flt Protected	0.993		0.950			
Satd. Flow (prot)	1666	0	1805	1881	1817	0
Flt Permitted	0.993		0.950			
Satd. Flow (perm)	1666	0	1805	1881	1817	0
Link Speed (k/h)	80			80	80	
Link Distance (m)	1005.9			641.1	1036.6	
Travel Time (s)	45.3			28.8	46.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	1%	4%	0%
Adj. Flow (vph)	27	179	173	607	408	27
Shared Lane Traffic (%)						
Lane Group Flow (vph)	206	0	173	607	435	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	51.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	25	165	159	558	375	25
Future Volume (Veh/h)	25	165	159	558	375	25
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	27	179	173	607	408	27
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1374	422	435			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1374	422	435			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	80	72	85			
cM capacity (veh/h)	137	636	1135			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	206	173	607	435
Volume Left	27	173	0	0
Volume Right	179	0	0	27
cSH	431	1135	1700	1700
Volume to Capacity	0.48	0.15	0.36	0.26
Queue Length 95th (m)	20.2	4.3	0.0	0.0
Control Delay (s)	20.8	8.7	0.0	0.0
Lane LOS	C	A		
Approach Delay (s)	20.8	1.9		0.0
Approach LOS	C			

Intersection Summary			
Average Delay	4.1		
Intersection Capacity Utilization	51.6%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	9	162	87	6	64	157	648	123	74	455	11
Future Volume (vph)	6	9	162	87	6	64	157	648	123	74	455	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	110.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	1		0	0		0
Taper Length (m)	7.5			7.5			75.0			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.877			0.945			0.976			0.997	
Flt Protected		0.998			0.973		0.950				0.993	
Satd. Flow (prot)	0	1661	0	0	1713	0	1787	1833	0	0	1830	0
Flt Permitted		0.998			0.973		0.950				0.993	
Satd. Flow (perm)	0	1661	0	0	1713	0	1787	1833	0	0	1830	0
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		1004.3			251.3			419.5			285.9	
Travel Time (s)		72.3			18.1			25.2			17.2	
Confl. Peds. (#/hr)							3					3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	2%	0%	2%	2%	2%	1%	1%	2%	2%	3%	0%
Adj. Flow (vph)	7	10	176	95	7	70	171	704	134	80	495	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	193	0	0	172	0	171	838	0	0	587	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	103.5%	ICU Level of Service G	
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	9	162	87	6	64	157	648	123	74	455	11
Future Volume (Veh/h)	6	9	162	87	6	64	157	648	123	74	455	11
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	7	10	176	95	7	70	171	704	134	80	495	12
Pedestrians		3										
Lane Width (m)		3.6										
Walking Speed (m/s)		1.2										
Percent Blockage		0										
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1784	1844	504	1955	1783	771	510			838		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1784	1844	504	1955	1783	771	510			838		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	82	82	69	0	89	83	84			90		
cM capacity (veh/h)	39	56	570	23	62	400	1058			796		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1
Volume Total	193	172	171	838	587
Volume Left	7	95	171	0	80
Volume Right	176	70	0	134	12
cSH	290	39	1058	1700	796
Volume to Capacity	0.66	4.36	0.16	0.49	0.10
Queue Length 95th (m)	35.0	Err	4.6	0.0	2.7
Control Delay (s)	38.9	Err	9.1	0.0	2.6
Lane LOS	E	F	A		A
Approach Delay (s)	38.9	Err	1.5		2.6
Approach LOS	E	F			

Intersection Summary					
Average Delay	882.4				
Intersection Capacity Utilization	103.5%	ICU Level of Service	G		
Analysis Period (min)	15				

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	32	76	91	960	708	67
Future Volume (vph)	32	76	91	960	708	67
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	20.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		15.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.905				0.988	
Flt Protected	0.985		0.950			
Satd. Flow (prot)	1544	0	1583	1720	1793	0
Flt Permitted	0.985		0.950			
Satd. Flow (perm)	1544	0	1583	1720	1793	0
Link Speed (k/h)	50			50	60	
Link Distance (m)	1002.3			98.3	419.5	
Travel Time (s)	72.2			7.1	25.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	10%	14%	10%	3%	13%
Bus Blockages (#/hr)	6	1	0	1	2	0
Adj. Flow (vph)	35	83	99	1043	770	73
Shared Lane Traffic (%)						
Lane Group Flow (vph)	118	0	99	1043	843	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.03	1.00	1.00	1.01	1.01	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	63.6%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	32	76	91	960	708	67
Future Volume (Veh/h)	32	76	91	960	708	67
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	35	83	99	1043	770	73
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				98		
pX, platoon unblocked	0.61					
vC, conflicting volume	2048	806	843			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2394	806	843			
tC, single (s)	6.4	6.3	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.4	2.3			
p0 queue free %	0	78	87			
cM capacity (veh/h)	20	370	744			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	118	99	1043	843
Volume Left	35	99	0	0
Volume Right	83	0	0	73
cSH	60	744	1700	1700
Volume to Capacity	1.98	0.13	0.61	0.50
Queue Length 95th (m)	89.9	3.7	0.0	0.0
Control Delay (s)	605.0	10.6	0.0	0.0
Lane LOS	F	B		
Approach Delay (s)	605.0	0.9		0.0
Approach LOS	F			

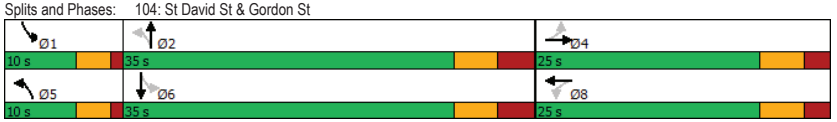
Intersection Summary				
Average Delay		34.4		
Intersection Capacity Utilization		63.6%	ICU Level of Service	B
Analysis Period (min)		15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	32	39	89	116	60	413	125	589	118	284	473	16
Future Volume (vph)	32	39	89	116	60	413	125	589	118	284	473	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0		0.0	25.0		0.0	20.0		0.0	25.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	20.0			70.0			60.0			15.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.98		0.99			1.00	1.00		1.00	1.00	
Frt		0.895			0.869			0.975			0.995	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1649	0	1736	1633	0	1805	1809	0	1736	1836	0
Flt Permitted	0.278			0.668			0.331			0.140		
Satd. Flow (perm)	528	1649	0	1207	1633	0	628	1809	0	256	1836	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		97			299			17			3	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		119.1			1012.2			564.4			98.3	
Travel Time (s)		8.6			72.9			40.6			7.1	
Confl. Peds. (#/hr)			7	7			4		3	3		4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	1%	4%	2%	1%	0%	2%	2%	4%	3%	0%
Adj. Flow (vph)	35	42	97	126	65	449	136	640	128	309	514	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	35	139	0	126	514	0	136	768	0	309	531	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane								Yes				
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	1.0	1.0		1.0	1.0		1.0	5.0		1.0	5.0	
Minimum Split (s)	25.0	25.0		25.0	25.0		5.0	35.0		5.0	35.0	
Total Split (s)	25.0	25.0		25.0	25.0		10.0	35.0		10.0	35.0	
Total Split (%)	35.7%	35.7%		35.7%	35.7%		14.3%	50.0%		14.3%	50.0%	
Maximum Green (s)	19.0	19.0		19.0	19.0		6.0	28.0		6.0	28.0	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.0	3.8		3.0	3.8	
All-Red Time (s)	2.3	2.3		2.3	2.3		1.0	3.2		1.0	3.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		4.0	7.0		4.0	7.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	5.0		2.0	5.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)	10.0	10.0		10.0	10.0			25.0			25.0	
Flash Dont Walk (s)	8.0	8.0		8.0	8.0			14.0			14.0	
Pedestrian Calls (#/hr)	0	0		0	0			0			0	
Act Effct Green (s)	14.4	14.4		14.4	14.4		36.9	28.2		37.6	28.6	
Actuated g/C Ratio	0.22	0.22		0.22	0.22		0.56	0.43		0.57	0.44	
v/c Ratio	0.30	0.32		0.48	0.87		0.30	0.98		1.10	0.66	
Control Delay	28.2	10.2		28.2	27.0		8.0	49.8		100.8	21.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	28.2	10.2		28.2	27.0		8.0	49.8		100.8	21.1	
LOS	C	B		C	C		A	D		F	C	
Approach Delay		13.8			27.2			43.5			50.4	
Approach LOS		B			C			D			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 65.7			
Natural Cycle: 90			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 1.10			
Intersection Signal Delay: 39.7		Intersection LOS: D	
Intersection Capacity Utilization 105.1%		ICU Level of Service G	
Analysis Period (min) 15			

Splits and Phases: 104: St David St & Gordon St



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	35	139	126	514	136	768	309	531
v/c Ratio	0.30	0.32	0.48	0.87	0.30	0.98	1.10	0.66
Control Delay	28.2	10.2	28.2	27.0	8.0	49.8	100.8	21.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.2	10.2	28.2	27.0	8.0	49.8	100.8	21.1
Queue Length 50th (m)	3.8	4.3	14.1	25.6	6.8	~100.1	~31.8	55.6
Queue Length 95th (m)	11.6	16.9	28.8	#75.8	14.6	#182.4	#81.9	95.1
Internal Link Dist (m)		95.1		988.2		540.4		74.3
Turn Bay Length (m)	20.0		25.0		20.0		25.0	
Base Capacity (vph)	153	548	351	687	463	785	282	799
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.25	0.36	0.75	0.29	0.98	1.10	0.66

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	32	39	89	116	60	413	125	589	118	284	473	16
Future Volume (vph)	32	39	89	116	60	413	125	589	118	284	473	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		4.0	7.0		4.0	7.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.98		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		0.99	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.90		1.00	0.87		1.00	0.97		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	1651		1717	1633		1804	1809		1735	1836	
Flt Permitted	0.28	1.00		0.67	1.00		0.33	1.00		0.14	1.00	
Satd. Flow (perm)	528	1651		1208	1633		628	1809		256	1836	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	35	42	97	126	65	449	136	640	128	309	514	17
RTOR Reduction (vph)	0	76	0	0	233	0	0	10	0	0	2	0
Lane Group Flow (vph)	35	63	0	126	281	0	136	758	0	309	529	0
Confl. Peds. (#/hr)			7	7			4		3	3		4
Heavy Vehicles (%)	0%	0%	1%	4%	2%	1%	0%	2%	2%	4%	3%	0%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	14.4	14.4		14.4	14.4		33.9	28.2		34.5	28.5	
Effective Green, g (s)	14.4	14.4		14.4	14.4		33.9	28.2		34.5	28.5	
Actuated g/C Ratio	0.22	0.22		0.22	0.22		0.52	0.43		0.53	0.43	
Clearance Time (s)	6.0	6.0		6.0	6.0		4.0	7.0		4.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	5.0		2.0	5.0	
Lane Grp Cap (vph)	115	362		265	358		426	777		269	797	
v/s Ratio Prot		0.04			c0.17		0.03	0.42		c0.10	0.29	
v/s Ratio Perm	0.07			0.10			0.14			c0.50		
v/c Ratio	0.30	0.17		0.48	0.78		0.32	0.98		1.15	0.66	
Uniform Delay, d1	21.4	20.8		22.3	24.1		8.9	18.4		14.1	14.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.5	0.2		1.3	10.7		0.2	26.5		101.1	2.8	
Delay (s)	22.9	21.0		23.7	34.8		9.1	44.8		115.3	17.5	
Level of Service	C	C		C	C		A	D		F	B	
Approach Delay (s)		21.4			32.6			39.4			53.5	
Approach LOS		C			C			D			D	

Intersection Summary				
HCM 2000 Control Delay	41.1	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	1.04			
Actuated Cycle Length (s)	65.6	Sum of lost time (s)	17.0	
Intersection Capacity Utilization	105.1%	ICU Level of Service	G	
Analysis Period (min)	15			

c Critical Lane Group

Appendix G3

2030 Total Operation Synchro Reports

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	25	146	141	330	480	27
Future Volume (vph)	25	146	141	330	480	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	115.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		100.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.885				0.993	
Flt Protected	0.993		0.950			
Satd. Flow (prot)	1588	0	1770	1667	1814	0
Flt Permitted	0.993		0.950			
Satd. Flow (perm)	1588	0	1770	1667	1814	0
Link Speed (k/h)	80			80	80	
Link Distance (m)	1005.9			640.4	1036.6	
Travel Time (s)	45.3			28.8	46.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	6%	2%	14%	4%	4%
Adj. Flow (vph)	27	159	153	359	522	29
Shared Lane Traffic (%)						
Lane Group Flow (vph)	186	0	153	359	551	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	55.1%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	25	146	141	330	480	27
Future Volume (Veh/h)	25	146	141	330	480	27
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	27	159	153	359	522	29
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1202	536	551			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1202	536	551			
tC, single (s)	6.4	6.3	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.4	2.2			
p0 queue free %	85	70	85			
cM capacity (veh/h)	175	537	1019			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	186	153	359	551
Volume Left	27	153	0	0
Volume Right	159	0	0	29
cSH	413	1019	1700	1700
Volume to Capacity	0.45	0.15	0.21	0.32
Queue Length 95th (m)	18.2	4.2	0.0	0.0
Control Delay (s)	20.7	9.2	0.0	0.0
Lane LOS	C	A		
Approach Delay (s)	20.7	2.7		0.0
Approach LOS	C			

Intersection Summary			
Average Delay	4.2		
Intersection Capacity Utilization	55.1%	ICU Level of Service	B
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	4	188	87	7	51	120	407	44	26	579	21
Future Volume (vph)	13	4	188	87	7	51	120	407	44	26	579	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	110.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	1		0	0		0
Taper Length (m)	7.5			7.5			75.0			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.876			0.953			0.985			0.995	
Flt Protected		0.997			0.971		0.950				0.998	
Satd. Flow (prot)	0	1614	0	0	1724	0	1626	1700	0	0	1774	0
Flt Permitted		0.997			0.971		0.950				0.998	
Satd. Flow (perm)	0	1614	0	0	1724	0	1626	1700	0	0	1774	0
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		1004.3			182.5			419.5			285.9	
Travel Time (s)		72.3			13.1			25.2			17.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	2%	3%	2%	2%	2%	11%	11%	2%	2%	6%	22%
Adj. Flow (vph)	14	4	204	95	8	55	130	442	48	28	629	23
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	222	0	0	158	0	130	490	0	0	680	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	91.5%	ICU Level of Service	F
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	13	4	188	87	7	51	120	407	44	26	579	21
Future Volume (Veh/h)	13	4	188	87	7	51	120	407	44	26	579	21
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	14	4	204	95	8	55	130	442	48	28	629	23
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1458	1446	640	1628	1434	466	652			490		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1458	1446	640	1628	1434	466	652			490		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.2			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.3			2.2		
p0 queue free %	83	96	57	0	93	91	85			97		
cM capacity (veh/h)	81	109	473	39	111	597	893			1073		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1
Volume Total	222	158	130	490	680
Volume Left	14	95	130	0	28
Volume Right	204	55	0	48	23
cSH	347	61	893	1700	1073
Volume to Capacity	0.64	2.58	0.15	0.29	0.03
Queue Length 95th (m)	33.6	126.6	4.1	0.0	0.6
Control Delay (s)	32.1	859.2	9.7	0.0	0.7
Lane LOS	D	F	A		A
Approach Delay (s)	32.1	859.2	2.0		0.7
Approach LOS	D	F			

Intersection Summary					
Average Delay		86.1			
Intersection Capacity Utilization		91.5%	ICU Level of Service		F
Analysis Period (min)		15			

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	15	66	28	579	890	30
Future Volume (vph)	15	66	28	579	890	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	20.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		15.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.890				0.996	
Flt Protected	0.991		0.950			
Satd. Flow (prot)	1549	0	1583	1727	1831	0
Flt Permitted	0.991		0.950			
Satd. Flow (perm)	1549	0	1583	1727	1831	0
Link Speed (k/h)	50			50	60	
Link Distance (m)	1002.3			98.3	419.5	
Travel Time (s)	72.2			7.1	25.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	10%	14%	10%	3%	13%
Adj. Flow (vph)	16	72	30	629	967	33
Shared Lane Traffic (%)						
Lane Group Flow (vph)	88	0	30	629	1000	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 60.2%		ICU Level of Service B	
Analysis Period (min) 15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	15	66	28	579	890	30
Future Volume (Veh/h)	15	66	28	579	890	30
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	16	72	30	629	967	33
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				98		
pX, platoon unblocked	0.81					
vC, conflicting volume	1672	984	1000			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1714	984	1000			
tC, single (s)	6.4	6.3	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.4	2.3			
p0 queue free %	79	75	95			
cM capacity (veh/h)	77	291	647			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	88	30	629	1000
Volume Left	16	30	0	0
Volume Right	72	0	0	33
cSH	194	647	1700	1700
Volume to Capacity	0.45	0.05	0.37	0.59
Queue Length 95th (m)	17.2	1.2	0.0	0.0
Control Delay (s)	38.1	10.8	0.0	0.0
Lane LOS	E	B		
Approach Delay (s)	38.1	0.5		0.0
Approach LOS	E			

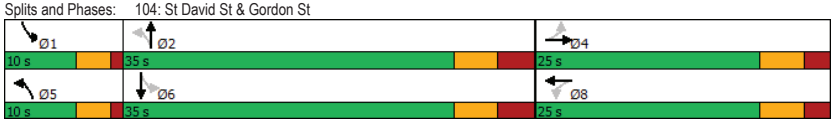
Intersection Summary				
Average Delay		2.1		
Intersection Capacity Utilization		60.2%	ICU Level of Service	B
Analysis Period (min)		15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	9	16	98	6	236	27	359	96	412	519	10
Future Volume (vph)	2	9	16	98	6	236	27	359	96	412	519	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0		0.0	25.0		0.0	20.0		0.0	25.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	20.0			70.0			60.0			15.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.98		0.99			1.00	1.00		1.00	1.00	
Frt		0.906			0.854			0.968			0.997	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1694	0	1787	1416	0	1736	1699	0	1612	1822	0
Flt Permitted	0.487			0.740			0.311			0.348		
Satd. Flow (perm)	925	1694	0	1384	1416	0	567	1699	0	590	1822	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		17			257			23			2	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		119.1			1012.2			564.4			98.3	
Travel Time (s)		8.6			72.9			40.6			7.1	
Confl. Peds. (#/hr)			3	3			6		3	3		6
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	1%	0%	15%	4%	9%	3%	12%	4%	0%
Adj. Flow (vph)	2	10	17	107	7	257	29	390	104	448	564	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	2	27	0	107	264	0	29	494	0	448	575	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane								Yes				
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	1.0	1.0		1.0	1.0		1.0	5.0		1.0	5.0	
Minimum Split (s)	25.0	25.0		25.0	25.0		5.0	35.0		5.0	35.0	
Total Split (s)	25.0	25.0		25.0	25.0		10.0	35.0		10.0	35.0	
Total Split (%)	35.7%	35.7%		35.7%	35.7%		14.3%	50.0%		14.3%	50.0%	
Maximum Green (s)	19.0	19.0		19.0	19.0		6.0	28.0		6.0	28.0	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.0	3.8		3.0	3.8	
All-Red Time (s)	2.3	2.3		2.3	2.3		1.0	3.2		1.0	3.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		4.0	7.0		4.0	7.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	5.0		2.0	5.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)	10.0	10.0		10.0	10.0			25.0			25.0	
Flash Dont Walk (s)	8.0	8.0		8.0	8.0			14.0			14.0	
Pedestrian Calls (#/hr)	0	0		0	0			0			0	
Act Effct Green (s)	9.8	9.8		9.8	9.8		30.3	22.2		32.6	23.3	
Actuated g/C Ratio	0.18	0.18		0.18	0.18		0.55	0.40		0.59	0.42	
v/c Ratio	0.01	0.09		0.44	0.57		0.07	0.71		0.98	0.75	
Control Delay	20.5	13.8		27.8	9.4		4.8	20.1		50.9	21.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	20.5	13.8		27.8	9.4		4.8	20.1		50.9	21.3	
LOS	C	B		C	A		A	C		D	C	
Approach Delay		14.2			14.7			19.3			34.2	
Approach LOS		B			B			B			C	

Intersection Summary		
Area Type:	Other	
Cycle Length: 70		
Actuated Cycle Length: 55.5		
Natural Cycle: 80		
Control Type: Semi Act-Uncoord		
Maximum v/c Ratio: 0.98		
Intersection Signal Delay: 26.2		Intersection LOS: C
Intersection Capacity Utilization 77.4%		ICU Level of Service D
Analysis Period (min) 15		

Splits and Phases: 104: St David St & Gordon St



Queues
104: St David St & Gordon St

Total - 2040
AM Peak Hour

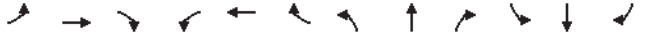
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	2	27	107	264	29	494	448	575
v/c Ratio	0.01	0.09	0.44	0.57	0.07	0.71	0.98	0.75
Control Delay	20.5	13.8	27.8	9.4	4.8	20.1	50.9	21.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.5	13.8	27.8	9.4	4.8	20.1	50.9	21.3
Queue Length 50th (m)	0.2	0.9	10.6	0.6	0.9	39.2	19.1	47.8
Queue Length 95th (m)	1.7	6.7	24.8	18.0	3.8	78.1	#80.8	94.4
Internal Link Dist (m)		95.1		988.2		540.4		74.3
Turn Bay Length (m)	20.0		25.0		20.0		25.0	
Base Capacity (vph)	323	604	484	662	450	888	458	943
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.04	0.22	0.40	0.06	0.56	0.98	0.61

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis
104: St David St & Gordon St

Total - 2040
AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	9	16	98	6	236	27	359	96	412	519	10
Future Volume (vph)	2	9	16	98	6	236	27	359	96	412	519	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		4.0	7.0		4.0	7.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.98		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.91		1.00	0.85		1.00	0.97		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	1694		1779	1416		1735	1700		1611	1822	
Flt Permitted	0.49	1.00		0.74	1.00		0.31	1.00		0.35	1.00	
Satd. Flow (perm)	925	1694		1385	1416		568	1700		590	1822	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2	10	17	107	7	257	29	390	104	448	564	11
RTOR Reduction (vph)	0	14	0	0	211	0	0	14	0	0	1	0
Lane Group Flow (vph)	2	13	0	107	53	0	29	480	0	448	574	0
Confl. Peds. (#/hr)			3	3			6		3	3		6
Heavy Vehicles (%)	0%	0%	0%	1%	0%	15%	4%	9%	3%	12%	4%	0%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	9.8	9.8		9.8	9.8		27.3	22.3		29.5	23.4	
Effective Green, g (s)	9.8	9.8		9.8	9.8		27.3	22.3		29.5	23.4	
Actuated g/C Ratio	0.18	0.18		0.18	0.18		0.49	0.40		0.53	0.42	
Clearance Time (s)	6.0	6.0		6.0	6.0		4.0	7.0		4.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	5.0		2.0	5.0	
Lane Grp Cap (vph)	164	300		245	251		386	686		428	772	
v/s Ratio Prot		0.01			0.04		0.01	0.28		c0.12	0.31	
v/s Ratio Perm	0.00			c0.08			0.03			c0.44		
v/c Ratio	0.01	0.04		0.44	0.21		0.08	0.70		1.05	0.74	
Uniform Delay, d1	18.7	18.8		20.2	19.4		7.6	13.7		11.7	13.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	0.1		1.2	0.4		0.0	4.0		56.2	4.7	
Delay (s)	18.7	18.9		21.5	19.8		7.6	17.7		67.9	18.0	
Level of Service	B	B		C	B		A	B		E	B	
Approach Delay (s)		18.9			20.3			17.2			39.9	
Approach LOS		B			C			B			D	

Intersection Summary				
HCM 2000 Control Delay	29.7	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.92			
Actuated Cycle Length (s)	55.2	Sum of lost time (s)	17.0	
Intersection Capacity Utilization	77.4%	ICU Level of Service	D	
Analysis Period (min)	15			

c Critical Lane Group

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	26	172	165	579	389	26
Future Volume (vph)	26	172	165	579	389	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	115.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		100.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.883				0.992	
Flt Protected	0.994		0.950			
Satd. Flow (prot)	1668	0	1805	1881	1817	0
Flt Permitted	0.994		0.950			
Satd. Flow (perm)	1668	0	1805	1881	1817	0
Link Speed (k/h)	80			80	80	
Link Distance (m)	1005.9			641.1	1036.6	
Travel Time (s)	45.3			28.8	46.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	1%	4%	0%
Adj. Flow (vph)	28	187	179	629	423	28
Shared Lane Traffic (%)						
Lane Group Flow (vph)	215	0	179	629	451	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	53.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	26	172	165	579	389	26
Future Volume (Veh/h)	26	172	165	579	389	26
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	28	187	179	629	423	28
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1424	437	451			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1424	437	451			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	78	70	84			
cM capacity (veh/h)	127	624	1120			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	215	179	629	451
Volume Left	28	179	0	0
Volume Right	187	0	0	28
cSH	413	1120	1700	1700
Volume to Capacity	0.52	0.16	0.37	0.27
Queue Length 95th (m)	23.3	4.5	0.0	0.0
Control Delay (s)	22.8	8.8	0.0	0.0
Lane LOS	C	A		
Approach Delay (s)	22.8	2.0		0.0
Approach LOS	C			

Intersection Summary			
Average Delay	4.4		
Intersection Capacity Utilization	53.3%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	9	170	87	6	64	164	675	123	74	457	12
Future Volume (vph)	6	9	170	87	6	64	164	675	123	74	457	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	110.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	1		0	0		0
Taper Length (m)	7.5			7.5			75.0			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.876			0.945			0.977			0.997	
Flt Protected		0.998			0.973		0.950				0.993	
Satd. Flow (prot)	0	1659	0	0	1713	0	1787	1835	0	0	1830	0
Flt Permitted		0.998			0.973		0.950				0.993	
Satd. Flow (perm)	0	1659	0	0	1713	0	1787	1835	0	0	1830	0
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		1004.3			251.3			419.5			285.9	
Travel Time (s)		72.3			18.1			25.2			17.2	
Confl. Peds. (#/hr)							3					3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	2%	0%	2%	2%	2%	1%	1%	2%	2%	3%	0%
Adj. Flow (vph)	7	10	185	95	7	70	178	734	134	80	497	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	202	0	0	172	0	178	868	0	0	590	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	105.6%	ICU Level of Service	G
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	9	170	87	6	64	164	675	123	74	457	12
Future Volume (Veh/h)	6	9	170	87	6	64	164	675	123	74	457	12
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	7	10	185	95	7	70	178	734	134	80	497	13
Pedestrians		3										
Lane Width (m)		3.6										
Walking Speed (m/s)		1.2										
Percent Blockage		0										
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1830	1890	506	2010	1830	801	513			868		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1830	1890	506	2010	1830	801	513			868		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	80	81	67	0	88	82	83			90		
cM capacity (veh/h)	35	52	569	20	57	384	1055			776		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1
Volume Total	202	172	178	868	590
Volume Left	7	95	178	0	80
Volume Right	185	70	0	134	13
cSH	283	35	1055	1700	776
Volume to Capacity	0.71	4.97	0.17	0.51	0.10
Queue Length 95th (m)	40.1	Err	4.8	0.0	2.7
Control Delay (s)	44.1	Err	9.1	0.0	2.7
Lane LOS	E	F	A		A
Approach Delay (s)	44.1	Err	1.5		2.7
Approach LOS	E	F			

Intersection Summary					
Average Delay		861.7			
Intersection Capacity Utilization		105.6%	ICU Level of Service		G
Analysis Period (min)		15			

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	33	80	95	993	733	70
Future Volume (vph)	33	80	95	993	733	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	20.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		15.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.905				0.988	
Flt Protected	0.986		0.950			
Satd. Flow (prot)	1545	0	1583	1720	1793	0
Flt Permitted	0.986		0.950			
Satd. Flow (perm)	1545	0	1583	1720	1793	0
Link Speed (k/h)	50			50	60	
Link Distance (m)	1002.3			98.3	419.5	
Travel Time (s)	72.2			7.1	25.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	10%	14%	10%	3%	13%
Bus Blockages (#/hr)	6	1	0	1	2	0
Adj. Flow (vph)	36	87	103	1079	797	76
Shared Lane Traffic (%)						
Lane Group Flow (vph)	123	0	103	1079	873	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.03	1.00	1.00	1.01	1.01	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	65.7%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	33	80	95	993	733	70
Future Volume (Veh/h)	33	80	95	993	733	70
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	36	87	103	1079	797	76
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				98		
pX, platoon unblocked	0.61					
vC, conflicting volume	2120	835	873			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2519	835	873			
tC, single (s)	6.4	6.3	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.4	2.3			
p0 queue free %	0	76	86			
cM capacity (veh/h)	16	356	724			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	123	103	1079	873
Volume Left	36	103	0	0
Volume Right	87	0	0	76
cSH	50	724	1700	1700
Volume to Capacity	2.45	0.14	0.63	0.51
Queue Length 95th (m)	101.7	4.0	0.0	0.0
Control Delay (s)	832.2	10.8	0.0	0.0
Lane LOS	F	B		
Approach Delay (s)	832.2	0.9		0.0
Approach LOS	F			

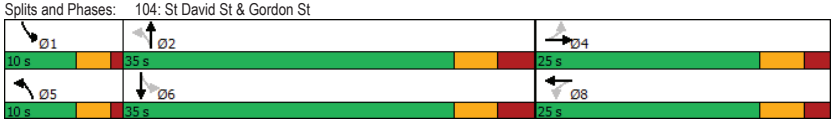
Intersection Summary				
Average Delay		47.5		
Intersection Capacity Utilization		65.7%	ICU Level of Service	C
Analysis Period (min)		15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	41	94	121	63	426	131	612	123	295	490	16
Future Volume (vph)	34	41	94	121	63	426	131	612	123	295	490	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0		0.0	25.0		0.0	20.0		0.0	25.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	20.0			70.0			60.0			15.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.98		0.99			1.00	1.00		1.00	1.00	
Frt		0.896			0.869			0.975			0.995	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1652	0	1736	1633	0	1805	1809	0	1736	1836	0
Flt Permitted	0.260			0.663			0.304			0.141		
Satd. Flow (perm)	494	1652	0	1198	1633	0	577	1809	0	257	1836	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		102			290			17			3	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		119.1			1012.2			564.4			98.3	
Travel Time (s)		8.6			72.9			40.6			7.1	
Confl. Peds. (#/hr)			7	7			4		3	3		4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	1%	4%	2%	1%	0%	2%	2%	4%	3%	0%
Adj. Flow (vph)	37	45	102	132	68	463	142	665	134	321	533	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	37	147	0	132	531	0	142	799	0	321	550	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane								Yes				
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	1.0	1.0		1.0	1.0		1.0	5.0		1.0	5.0	
Minimum Split (s)	25.0	25.0		25.0	25.0		5.0	35.0		5.0	35.0	
Total Split (s)	25.0	25.0		25.0	25.0		10.0	35.0		10.0	35.0	
Total Split (%)	35.7%	35.7%		35.7%	35.7%		14.3%	50.0%		14.3%	50.0%	
Maximum Green (s)	19.0	19.0		19.0	19.0		6.0	28.0		6.0	28.0	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.0	3.8		3.0	3.8	
All-Red Time (s)	2.3	2.3		2.3	2.3		1.0	3.2		1.0	3.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		4.0	7.0		4.0	7.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	5.0		2.0	5.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)	10.0	10.0		10.0	10.0			25.0			25.0	
Flash Dont Walk (s)	8.0	8.0		8.0	8.0			14.0			14.0	
Pedestrian Calls (#/hr)	0	0		0	0			0			0	
Act Effct Green (s)	15.4	15.4		15.4	15.4		36.8	28.1		37.5	28.4	
Actuated g/C Ratio	0.23	0.23		0.23	0.23		0.55	0.42		0.56	0.43	
v/c Ratio	0.32	0.32		0.48	0.89		0.33	1.03		1.15	0.70	
Control Delay	29.2	10.0		27.9	29.4		8.6	64.6		122.3	22.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	29.2	10.0		27.9	29.4		8.6	64.6		122.3	22.8	
LOS	C	A		C	C		A	E		F	C	
Approach Delay		13.8			29.1			56.1			59.5	
Approach LOS		B			C			E			E	

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 66.6			
Natural Cycle: 90			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 1.15			
Intersection Signal Delay: 47.6		Intersection LOS: D	
Intersection Capacity Utilization 108.2%		ICU Level of Service G	
Analysis Period (min) 15			

Splits and Phases: 104: St David St & Gordon St



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	37	147	132	531	142	799	321	550
v/c Ratio	0.32	0.32	0.48	0.89	0.33	1.03	1.15	0.70
Control Delay	29.2	10.0	27.9	29.4	8.6	64.6	122.3	22.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.2	10.0	27.9	29.4	8.6	64.6	122.3	22.8
Queue Length 50th (m)	4.0	4.6	14.9	30.1	7.8	~124.5	~37.9	61.8
Queue Length 95th (m)	12.2	17.6	30.2	#83.9	15.2	#192.4	#86.3	#101.7
Internal Link Dist (m)		95.1		988.2		540.4		74.3
Turn Bay Length (m)	20.0		25.0		20.0		25.0	
Base Capacity (vph)	141	546	343	674	433	773	278	785
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.26	0.27	0.38	0.79	0.33	1.03	1.15	0.70

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	41	94	121	63	426	131	612	123	295	490	16
Future Volume (vph)	34	41	94	121	63	426	131	612	123	295	490	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		4.0	7.0		4.0	7.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.98		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		0.99	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.90		1.00	0.87		1.00	0.97		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	1652		1717	1633		1804	1809		1735	1836	
Flt Permitted	0.26	1.00		0.66	1.00		0.30	1.00		0.14	1.00	
Satd. Flow (perm)	494	1652		1199	1633		578	1809		257	1836	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	37	45	102	132	68	463	142	665	134	321	533	17
RTOR Reduction (vph)	0	78	0	0	223	0	0	10	0	0	2	0
Lane Group Flow (vph)	37	69	0	132	308	0	142	789	0	321	548	0
Confl. Peds. (#/hr)			7	7			4		3	3		4
Heavy Vehicles (%)	0%	0%	1%	4%	2%	1%	0%	2%	2%	4%	3%	0%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	15.4	15.4		15.4	15.4		33.8	28.1		34.4	28.4	
Effective Green, g (s)	15.4	15.4		15.4	15.4		33.8	28.1		34.4	28.4	
Actuated g/C Ratio	0.23	0.23		0.23	0.23		0.51	0.42		0.52	0.43	
Clearance Time (s)	6.0	6.0		6.0	6.0		4.0	7.0		4.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	5.0		2.0	5.0	
Lane Grp Cap (vph)	114	382		277	378		398	764		266	784	
v/s Ratio Prot		0.04			c0.19		0.03	0.44		c0.11	0.30	
v/s Ratio Perm	0.07			0.11			0.15			c0.51		
v/c Ratio	0.32	0.18		0.48	0.82		0.36	1.03		1.21	0.70	
Uniform Delay, d1	21.2	20.5		22.1	24.2		9.5	19.2		14.8	15.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.7	0.2		1.3	12.7		0.2	41.3		122.9	3.5	
Delay (s)	22.9	20.7		23.4	36.9		9.7	60.5		137.8	19.0	
Level of Service	C	C		C	D		A	E		F	B	
Approach Delay (s)		21.1			34.2			52.9			62.8	
Approach LOS		C			C			D			E	

Intersection Summary					
HCM 2000 Control Delay	49.3	HCM 2000 Level of Service	D		
HCM 2000 Volume to Capacity ratio	1.09				
Actuated Cycle Length (s)	66.5	Sum of lost time (s)	17.0		
Intersection Capacity Utilization	108.2%	ICU Level of Service	G		
Analysis Period (min)	15				

c Critical Lane Group

Appendix H

Traffic Control Signal Warrants

Signal Justification Calculation for Forecasted Volumes
(OTM Book 12 - Justification 7)

Horizon Year: Background - 2030
Region/City/Township: Fergus, Centre Wellington

Major Street: Highway 6
Minor Street: Nichol Road 15

North/South?: Y

Number of Approach Lanes: 1
Tee Intersection? Y
Flow Conditions: Free

PM Forecast Only? N

Warrant Results		
150% Satisfied	No	Justification for new intersections with forecast traffic
120% Satisfied	No	Justification for existing intersections with forecast traffic

	Major Street						Minor Street						
	Highway 6						Nichol Road 15						
	Northbound			Southbound			Eastbound			Westbound			Peds Crossing
Time Period	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Main Road
AM Peak Hour	115	256			420	24	22		129				
PM Peak Hour	141	485			299	23	23		141				
Average Hourly Volume	64	185	0	0	180	12	11	0	68	0	0	0	0

Warrant	AHV
1A - All	520
1B - Minor	79
2A - Major	441
2B - Cross	11

Warrant 1 - Minimum Vehicular Volume

	Approach Lanes	1		2 or more		Average Hourly Volume
1A	Flow Conditions	Free	Restricted	Free	Restricted	
		X				
	All Approaches	480	720	600	900	520
					% Fulfilled	108.2%

	Approach Lanes	1		2 or more		Average Hourly Volume
1B	Flow Conditions	Free	Restricted	Free	Restricted	
		X				
	Minor Street Approaches	180	255	180	255	79
					% Fulfilled	43.8%

Warrant 2 - Delay To Cross Traffic

	Approach Lanes	1		2 or more		Average Hourly Volume
2A	Flow Conditions	Free	Restricted	Free	Restricted	
		X				
	Major Street Approaches	480	720	600	900	441
					% Fulfilled	91.8%

	Approach Lanes	1		2 or more		Average Hourly Volume
2B	Flow Conditions	Free	Restricted	Free	Restricted	
		X				
	Traffic Crossing Major Street	50	75	50	75	11
					% Fulfilled	22.5%

Signal Justification Calculation for Forecasted Volumes
(OTM Book 12 - Justification 7)

Horizon Year: Background - 2035
Region/City/Township: Fergus, Centre Wellington

Major Street: Highway 6
Minor Street: Nichol Road 15

North/South?: Y

Number of Approach Lanes: 1
Tee Intersection? Y
Flow Conditions: Free

PM Forecast Only? N

Warrant Results		
150% Satisfied	No	Justification for new intersections with forecast traffic
120% Satisfied	No	Justification for existing intersections with forecast traffic

	Major Street						Minor Street						
	Highway 6						Nichol Road 15						
	Northbound			Southbound			Eastbound			Westbound			Peds Crossing
Time Period	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Main Road
AM Peak Hour	120	267			436	26	23		134				
PM Peak Hour	146	505			312	25	25		147				
Average Hourly Volume	67	193	0	0	187	13	12	0	70	0	0	0	0

Warrant	AHV
1A - All	542
1B - Minor	82
2A - Major	459
2B - Cross	12

Warrant 1 - Minimum Vehicular Volume

	Approach Lanes	1		2 or more		Average Hourly Volume
1A	Flow Conditions	Free	Restricted	Free	Restricted	
		X				
	All Approaches	480	720	600	900	542
					% Fulfilled	112.8%

	Approach Lanes	1		2 or more		Average Hourly Volume
1B	Flow Conditions	Free	Restricted	Free	Restricted	
		X				
	Minor Street Approaches	180	255	180	255	82
					% Fulfilled	45.7%

Warrant 2 - Delay To Cross Traffic

	Approach Lanes	1		2 or more		Average Hourly Volume
2A	Flow Conditions	Free	Restricted	Free	Restricted	
		X				
	Major Street Approaches	480	720	600	900	459
					% Fulfilled	95.7%

	Approach Lanes	1		2 or more		Average Hourly Volume
2B	Flow Conditions	Free	Restricted	Free	Restricted	
		X				
	Traffic Crossing Major Street	50	75	50	75	12
					% Fulfilled	24.0%

Signal Justification Calculation for Forecasted Volumes
(OTM Book 12 - Justification 7)

Horizon Year: Background - 2040
Region/City/Township: Fergus, Centre Wellington

Major Street: Highway 6
Minor Street: Nichol Road 15

North/South?: Y

Number of Approach Lanes: 1
Tee Intersection? Y
Flow Conditions: Free

PM Forecast Only? N

Warrant Results		
150% Satisfied	No	Justification for new intersections with forecast traffic
120% Satisfied	No	Justification for existing intersections with forecast traffic

	Major Street						Minor Street						
	Highway 6						Nichol Road 15						
	Northbound			Southbound			Eastbound			Westbound			Peds Crossing
Time Period	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Main Road
AM Peak Hour	126	279			453	27	25		139				
PM Peak Hour	152	526			326	26	26		154				
Average Hourly Volume	70	201	0	0	195	13	13	0	73	0	0	0	0

Warrant	AHV
1A - All	565
1B - Minor	86
2A - Major	479
2B - Cross	13

Warrant 1 - Minimum Vehicular Volume

	Approach Lanes	1		2 or more		Average Hourly Volume
1A	Flow Conditions	Free	Restricted	Free	Restricted	
		X				
	All Approaches	480	720	600	900	565
					% Fulfilled	117.7%

	Approach Lanes	1		2 or more		Average Hourly Volume
1B	Flow Conditions	Free	Restricted	Free	Restricted	
		X				
	Minor Street Approaches	180	255	180	255	86
					% Fulfilled	47.8%

Warrant 2 - Delay To Cross Traffic

	Approach Lanes	1		2 or more		Average Hourly Volume
2A	Flow Conditions	Free	Restricted	Free	Restricted	
		X				
	Major Street Approaches	480	720	600	900	479
					% Fulfilled	99.7%

	Approach Lanes	1		2 or more		Average Hourly Volume
2B	Flow Conditions	Free	Restricted	Free	Restricted	
		X				
	Traffic Crossing Major Street	50	75	50	75	13
					% Fulfilled	25.5%

Signal Justification Calculation for Forecasted Volumes
(OTM Book 12 - Justification 7)

Horizon Year: Total - 2030
Region/City/Township: Fergus, Centre Wellington

Major Street: Highway 6
Minor Street: Nichol Road 15

North/South?: Y

Number of Approach Lanes: 1
Tee Intersection? Y
Flow Conditions: Free

PM Forecast Only? N

Warrant Results		
150% Satisfied	No	Justification for new intersections with forecast traffic
120% Satisfied	No	Justification for existing intersections with forecast traffic

	Major Street						Minor Street						
	Highway 6						Nichol Road 15						
	Northbound			Southbound			Eastbound			Westbound			Peds Crossing
Time Period	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Main Road
AM Peak Hour	130	307			447	24	22		136				
PM Peak Hour	154	538			362	23	23		159				
Average Hourly Volume	71	211	0	0	202	12	11	0	74	0	0	0	0

Warrant	AHV
1A - All	581
1B - Minor	85
2A - Major	496
2B - Cross	11

Warrant 1 - Minimum Vehicular Volume

	Approach Lanes	1		2 or more		Average Hourly Volume
1A	Flow Conditions	Free	Restricted	Free	Restricted	
		X				
	All Approaches	480	720	600	900	581
					% Fulfilled	121.1%

	Approach Lanes	1		2 or more		Average Hourly Volume
1B	Flow Conditions	Free	Restricted	Free	Restricted	
		X				
	Minor Street Approaches	180	255	180	255	85
					% Fulfilled	47.2%

Warrant 2 - Delay To Cross Traffic

	Approach Lanes	1		2 or more		Average Hourly Volume
2A	Flow Conditions	Free	Restricted	Free	Restricted	
		X				
	Major Street Approaches	480	720	600	900	496
					% Fulfilled	103.4%

	Approach Lanes	1		2 or more		Average Hourly Volume
2B	Flow Conditions	Free	Restricted	Free	Restricted	
		X				
	Traffic Crossing Major Street	50	75	50	75	11
					% Fulfilled	22.5%

Signal Justification Calculation for Forecasted Volumes
(OTM Book 12 - Justification 7)

Horizon Year: Total - 2035
Region/City/Township: Fergus, Centre Wellington

Major Street: Highway 6
Minor Street: Nichol Road 15

North/South?: Y

Number of Approach Lanes: 1
Tee Intersection? Y
Flow Conditions: Free

PM Forecast Only? N

Warrant Results		
150% Satisfied	No	Justification for new intersections with forecast traffic
120% Satisfied	No	Justification for existing intersections with forecast traffic

	Major Street						Minor Street						
	Highway 6						Nichol Road 15						
	Northbound			Southbound			Eastbound			Westbound			Peds Crossing
Time Period	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Main Road
AM Peak Hour	135	318			463	26	23		141				0
PM Peak Hour	159	558			375	25	25		165				0
Average Hourly Volume	74	219	0	0	210	13	12	0	77	0	0	0	0

Warrant	AHV
1A - All	603
1B - Minor	89
2A - Major	515
2B - Cross	12

Warrant 1 - Minimum Vehicular Volume

	Approach Lanes	1		2 or more		Average Hourly Volume
1A	Flow Conditions	Free	Restricted	Free	Restricted	
		X				
	All Approaches	480	720	600	900	603
					% Fulfilled	125.7%

	Approach Lanes	1		2 or more		Average Hourly Volume
1B	Flow Conditions	Free	Restricted	Free	Restricted	
		X				
	Minor Street Approaches	180	255	180	255	89
					% Fulfilled	49.2%

Warrant 2 - Delay To Cross Traffic

	Approach Lanes	1		2 or more		Average Hourly Volume
2A	Flow Conditions	Free	Restricted	Free	Restricted	
		X				
	Major Street Approaches	480	720	600	900	515
					% Fulfilled	107.2%

	Approach Lanes	1		2 or more		Average Hourly Volume
2B	Flow Conditions	Free	Restricted	Free	Restricted	
		X				
	Traffic Crossing Major Street	50	75	50	75	12
					% Fulfilled	24.0%

Signal Justification Calculation for Forecasted Volumes
(OTM Book 12 - Justification 7)

Horizon Year: Total - 2040
Region/City/Township: Fergus, Centre Wellington

Major Street: Highway 6
Minor Street: Nichol Road 15

North/South?: Y

Number of Approach Lanes: 1
Tee Intersection? Y
Flow Conditions: Free

PM Forecast Only? N

Warrant Results		
150% Satisfied	No	Justification for new intersections with forecast traffic
120% Satisfied	No	Justification for existing intersections with forecast traffic

	Major Street						Minor Street						
	Highway 6						Nichol Road 15						
	Northbound			Southbound			Eastbound			Westbound			Peds Crossing
Time Period	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Main Road
AM Peak Hour	141	330			480	27	25		146				0
PM Peak Hour	165	579			389	26	26		172				0
Average Hourly Volume	77	227	0	0	217	13	13	0	80	0	0	0	0

Warrant	AHV
1A - All	627
1B - Minor	92
2A - Major	534
2B - Cross	13

Warrant 1 - Minimum Vehicular Volume

	Approach Lanes	1		2 or more		Average Hourly Volume
1A	Flow Conditions	Free	Restricted	Free	Restricted	
		X				
	All Approaches	480	720	600	900	627
					% Fulfilled	130.5%

	Approach Lanes	1		2 or more		Average Hourly Volume
1B	Flow Conditions	Free	Restricted	Free	Restricted	
		X				
	Minor Street Approaches	180	255	180	255	92
					% Fulfilled	51.3%

Warrant 2 - Delay To Cross Traffic

	Approach Lanes	1		2 or more		Average Hourly Volume
2A	Flow Conditions	Free	Restricted	Free	Restricted	
		X				
	Major Street Approaches	480	720	600	900	534
					% Fulfilled	111.3%

	Approach Lanes	1		2 or more		Average Hourly Volume
2B	Flow Conditions	Free	Restricted	Free	Restricted	
		X				
	Traffic Crossing Major Street	50	75	50	75	13
					% Fulfilled	25.5%

Signal Justification Calculation for Forecasted Volumes
(OTM Book 12 - Justification 7)

Horizon Year: Background - 2030
Region/City/Township: Fergues, Centre Wellington

Major Street: Highway 6
Minor Street: Sideroad 18

North/South?: Y

Number of Approach Lanes: 1
Tee Intersection? Y
Flow Conditions: Restricted

PM Forecast Only? N

Warrant Results		
150% Satisfied	No	Justification for new intersections with forecast traffic
120% Satisfied	No	Justification for existing intersections with forecast traffic

	Major Street						Minor Street						
	Highway 6						Sideroad 18						
	Northbound			Southbound			Eastbound			Westbound			Peds Crossing
Time Period	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Main Road
AM Peak Hour	110	374			538	19	12		173				
PM Peak Hour	150	641			449	11	5		155				
Average Hourly Volume	65	254	0	0	247	8	4	0	82	0	0	0	0

Warrant	AHV
1A - All	659
1B - Minor	86
2A - Major	573
2B - Cross	4

Warrant 1 - Minimum Vehicular Volume

	Approach Lanes	1		2 or more		Average Hourly Volume
1A	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	All Approaches	480	720	600	900	659
					% Fulfilled	91.6%

	Approach Lanes	1		2 or more		Average Hourly Volume
1B	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Minor Street Approaches	180	255	180	255	86
					% Fulfilled	33.8%

Warrant 2 - Delay To Cross Traffic

	Approach Lanes	1		2 or more		Average Hourly Volume
2A	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Major Street Approaches	480	720	600	900	573
					% Fulfilled	79.6%

	Approach Lanes	1		2 or more		Average Hourly Volume
2B	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Traffic Crossing Major Street	50	75	50	75	4
					% Fulfilled	5.7%

Signal Justification Calculation for Forecasted Volumes
(OTM Book 12 - Justification 7)

Horizon Year: Background - 2035
Region/City/Township: Fergues, Centre Wellington

Major Street: Highway 6
Minor Street: Sideroad 18

North/South?: Y

Number of Approach Lanes: 1
Tee Intersection? Y
Flow Conditions: Restricted

PM Forecast Only? N

Warrant Results		
150% Satisfied	No	Justification for new intersections with forecast traffic
120% Satisfied	No	Justification for existing intersections with forecast traffic

	Major Street						Minor Street						
	Highway 6						Sideroad 18						
	Northbound			Southbound			Eastbound			Westbound			Peds Crossing
Time Period	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Main Road
AM Peak Hour	115	390			558	20	12		180				
PM Peak Hour	157	667			467	11	6		162				
Average Hourly Volume	68	264	0	0	256	8	5	0	86	0	0	0	0

Warrant	AHV
1A - All	686
1B - Minor	90
2A - Major	596
2B - Cross	5

Warrant 1 - Minimum Vehicular Volume

	Approach Lanes	1		2 or more		Average Hourly Volume
1A	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	All Approaches	480	720	600	900	686
					% Fulfilled	95.3%

	Approach Lanes	1		2 or more		Average Hourly Volume
1B	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Minor Street Approaches	180	255	180	255	90
					% Fulfilled	35.3%

Warrant 2 - Delay To Cross Traffic

	Approach Lanes	1		2 or more		Average Hourly Volume
2A	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Major Street Approaches	480	720	600	900	596
					% Fulfilled	82.8%

	Approach Lanes	1		2 or more		Average Hourly Volume
2B	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Traffic Crossing Major Street	50	75	50	75	5
					% Fulfilled	6.0%

Signal Justification Calculation for Forecasted Volumes
(OTM Book 12 - Justification 7)

Horizon Year: Background - 2040
Region/City/Township: Fergues, Centre Wellington

Major Street: Highway 6
Minor Street: Sideroad 18

North/South?: Y

Number of Approach Lanes: 1
Tee Intersection? Y
Flow Conditions: Restricted

PM Forecast Only? N

Warrant Results		
150% Satisfied	No	Justification for new intersections with forecast traffic
120% Satisfied	No	Justification for existing intersections with forecast traffic

	Major Street						Minor Street						
	Highway 6						Sideroad 18						
	Northbound			Southbound			Eastbound			Westbound			Peds Crossing
Time Period	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Main Road
AM Peak Hour	120	407			579	21	13		188				
PM Peak Hour	164	694			487	12	6		170				
Average Hourly Volume	71	275	0	0	267	8	5	0	90	0	0	0	0

Warrant	AHV
1A - All	715
1B - Minor	94
2A - Major	621
2B - Cross	5

Warrant 1 - Minimum Vehicular Volume

	Approach Lanes	1		2 or more		Average Hourly Volume
1A	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	All Approaches	480	720	600	900	715
					% Fulfilled	99.3%

	Approach Lanes	1		2 or more		Average Hourly Volume
1B	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Minor Street Approaches	180	255	180	255	94
					% Fulfilled	37.0%

Warrant 2 - Delay To Cross Traffic

	Approach Lanes	1		2 or more		Average Hourly Volume
2A	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Major Street Approaches	480	720	600	900	621
					% Fulfilled	86.3%

	Approach Lanes	1		2 or more		Average Hourly Volume
2B	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Traffic Crossing Major Street	50	75	50	75	5
					% Fulfilled	6.3%

Signal Justification Calculation for Forecasted Volumes
(OTM Book 12 - Justification 7)

Horizon Year: Total - 2030
Region/City/Township: Fergues, Centre Wellington

Major Street: Highway 6
Minor Street: Sideroad 18/Street B

North/South?: Y

Number of Approach Lanes: 1
Tee Intersection? N
Flow Conditions: Restricted

PM Forecast Only? N

Warrant Results		
150% Satisfied	No	Justification for new intersections with forecast traffic
120% Satisfied	No	Justification for existing intersections with forecast traffic

	Major Street						Minor Street						
	Highway 6						Sideroad 18/Street B						
	Northbound			Southbound			Eastbound			Westbound			Peds Crossing
Time Period	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Main Road
AM Peak Hour	110	374	44	26	538	19	12	4	173	87	7	51	10
PM Peak Hour	150	622	123	74	437	11	5	9	155	87	6	64	10
Average Hourly Volume	65	249	42	25	244	8	4	3	82	44	3	29	5

Warrant	AHV
1A - All	797
1B - Minor	165
2A - Major	632
2B - Cross	56

Warrant 1 - Minimum Vehicular Volume

	Approach Lanes	1		2 or more		Average Hourly Volume
1A	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	All Approaches	480	720	600	900	797
					% Fulfilled	110.7%

	Approach Lanes	1		2 or more		Average Hourly Volume
1B	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Minor Street Approaches	120	170	120	170	165
					% Fulfilled	97.1%

Warrant 2 - Delay To Cross Traffic

	Approach Lanes	1		2 or more		Average Hourly Volume
2A	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Major Street Approaches	480	720	600	900	632
					% Fulfilled	87.8%

	Approach Lanes	1		2 or more		Average Hourly Volume
2B	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Traffic Crossing Major Street	50	75	50	75	56
					% Fulfilled	74.7%

Signal Justification Calculation for Forecasted Volumes
(OTM Book 12 - Justification 7)

Horizon Year: Total - 2035
Region/City/Township: Fergues, Centre Wellington

Major Street: Highway 6
Minor Street: Sideroad 18/Street B

North/South?: Y

Number of Approach Lanes: 1
Tee Intersection? N
Flow Conditions: Restricted

PM Forecast Only? N

Warrant Results		
150% Satisfied	No	Justification for new intersections with forecast traffic
120% Satisfied	No	Justification for existing intersections with forecast traffic

	Major Street						Minor Street						
	Highway 6						Sideroad 18/Street B						
	Northbound			Southbound			Eastbound			Westbound			Peds Crossing
Time Period	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Main Road
AM Peak Hour	115	390	44	26	558	20	12	4	180	87	7	51	10
PM Peak Hour	157	648	123	74	455	11	6	9	162	87	6	64	10
Average Hourly Volume	68	260	42	25	253	8	5	3	86	44	3	29	5

Warrant	AHV
1A - All	824
1B - Minor	169
2A - Major	655
2B - Cross	56

Warrant 1 - Minimum Vehicular Volume

	Approach Lanes	1		2 or more		Average Hourly Volume
1A	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	All Approaches	480	720	600	900	824
					% Fulfilled	114.4%

	Approach Lanes	1		2 or more		Average Hourly Volume
1B	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Minor Street Approaches	120	170	120	170	169
					% Fulfilled	99.3%

Warrant 2 - Delay To Cross Traffic

	Approach Lanes	1		2 or more		Average Hourly Volume
2A	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Major Street Approaches	480	720	600	900	655
					% Fulfilled	91.0%

	Approach Lanes	1		2 or more		Average Hourly Volume
2B	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Traffic Crossing Major Street	50	75	50	75	56
					% Fulfilled	75.0%

Signal Justification Calculation for Forecasted Volumes
(OTM Book 12 - Justification 7)

Horizon Year: Total - 2040
Region/City/Township: Fergues, Centre Wellington

Major Street: Highway 6
Minor Street: Sideroad 18/Street B

North/South?: Y

Number of Approach Lanes: 1
Tee Intersection? N
Flow Conditions: Restricted

PM Forecast Only? N

Warrant Results		
150% Satisfied	No	Justification for new intersections with forecast traffic
120% Satisfied	No	Justification for existing intersections with forecast traffic

	Major Street						Minor Street						
	Highway 6						Sideroad 18/Street B						
	Northbound			Southbound			Eastbound			Westbound			Peds Crossing
Time Period	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Main Road
AM Peak Hour	120	407	44	26	579	21	13	4	188	87	7	51	10
PM Peak Hour	164	675	123	74	475	12	6	9	170	87	6	64	10
Average Hourly Volume	71	271	42	25	264	8	5	3	90	44	3	29	5

Warrant	AHV
1A - All	853
1B - Minor	173
2A - Major	680
2B - Cross	57

Warrant 1 - Minimum Vehicular Volume

	Approach Lanes	1		2 or more		Average Hourly Volume
1A	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	All Approaches	480	720	600	900	853
					% Fulfilled	118.5%

	Approach Lanes	1		2 or more		Average Hourly Volume
1B	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Minor Street Approaches	120	170	120	170	173
					% Fulfilled	101.8%

Warrant 2 - Delay To Cross Traffic

	Approach Lanes	1		2 or more		Average Hourly Volume
2A	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Major Street Approaches	480	720	600	900	680
					% Fulfilled	94.4%

	Approach Lanes	1		2 or more		Average Hourly Volume
2B	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Traffic Crossing Major Street	50	75	50	75	57
					% Fulfilled	75.3%

Signal Justification Calculation for Forecasted Volumes
(OTM Book 12 - Justification 7)

Horizon Year: Background - 2030
Region/City/Township: Fergus, Centre Wellington

Major Street: Highway 6/St. David Street
Minor Street: Sideroad 19

North/South?: Y

Number of Approach Lanes: 1
Tee Intersection? Y
Flow Conditions: Restricted

PM Forecast Only? N

Warrant Results		
150% Satisfied	No	Justification for new intersections with forecast traffic
120% Satisfied	No	Justification for existing intersections with forecast traffic

	Major Street						Minor Street						
	Highway 6/St. David Street						Sideroad 19						
	Northbound			Southbound			Eastbound			Westbound			Peds Crossing
Time Period	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Main Road
AM Peak Hour	25	496			755	21	10		61				10
PM Peak Hour	87	834			616	58	22		73				10
Average Hourly Volume	28	333	0	0	343	20	8	0	34	0	0	0	5

Warrant	AHV
1A - All	765
1B - Minor	42
2A - Major	723
2B - Cross	13

Warrant 1 - Minimum Vehicular Volume

	Approach Lanes	1		2 or more		Average Hourly Volume
1A	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	All Approaches	480	720	600	900	765
					% Fulfilled	106.2%

	Approach Lanes	1		2 or more		Average Hourly Volume
1B	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Minor Street Approaches	180	255	180	255	42
					% Fulfilled	16.3%

Warrant 2 - Delay To Cross Traffic

	Approach Lanes	1		2 or more		Average Hourly Volume
2A	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Major Street Approaches	480	720	600	900	723
					% Fulfilled	100.4%

	Approach Lanes	1		2 or more		Average Hourly Volume
2B	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Traffic Crossing Major Street	50	75	50	75	13
					% Fulfilled	17.3%

Signal Justification Calculation for Forecasted Volumes
(OTM Book 12 - Justification 7)

Horizon Year: Background - 2035
Region/City/Township: Fergus, Centre Wellington

Major Street: Highway 6/St. David Street
Minor Street: Sideroad 19

North/South?: Y

Number of Approach Lanes: 1
Tee Intersection? Y
Flow Conditions: Restricted

PM Forecast Only? N

Warrant Results		
150% Satisfied	No	Justification for new intersections with forecast traffic
120% Satisfied	No	Justification for existing intersections with forecast traffic

	Major Street						Minor Street						
	Highway 6/St. David Street						Sideroad 19						
	Northbound			Southbound			Eastbound			Westbound			Peds Crossing
Time Period	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Main Road
AM Peak Hour	27	517			782	22	11		63				10
PM Peak Hour	91	865			639	61	23		76				10
Average Hourly Volume	30	346	0	0	355	21	9	0	35	0	0	0	5

Warrant	AHV
1A - All	794
1B - Minor	43
2A - Major	751
2B - Cross	14

Warrant 1 - Minimum Vehicular Volume

	Approach Lanes	1		2 or more		Average Hourly Volume
1A	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	All Approaches	480	720	600	900	794
					% Fulfilled	110.3%

	Approach Lanes	1		2 or more		Average Hourly Volume
1B	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Minor Street Approaches	180	255	180	255	43
					% Fulfilled	17.0%

Warrant 2 - Delay To Cross Traffic

	Approach Lanes	1		2 or more		Average Hourly Volume
2A	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Major Street Approaches	480	720	600	900	751
					% Fulfilled	104.3%

	Approach Lanes	1		2 or more		Average Hourly Volume
2B	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Traffic Crossing Major Street	50	75	50	75	14
					% Fulfilled	18.0%

Signal Justification Calculation for Forecasted Volumes
(OTM Book 12 - Justification 7)

Horizon Year: Background - 2040
Region/City/Township: Fergus, Centre Wellington

Major Street: Highway 6/St. David Street
Minor Street: Sideroad 19

North/South?: Y

Number of Approach Lanes: 1
Tee Intersection? Y
Flow Conditions: Restricted

PM Forecast Only? N

Warrant Results		
150% Satisfied	No	Justification for new intersections with forecast traffic
120% Satisfied	No	Justification for existing intersections with forecast traffic

	Major Street						Minor Street						
	Highway 6/St. David Street						Sideroad 19						
	Northbound			Southbound			Eastbound			Westbound			Peds Crossing
Time Period	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Main Road
AM Peak Hour	28	539			810	23	11		66				10
PM Peak Hour	95	898			664	64	24		80				10
Average Hourly Volume	31	359	0	0	369	22	9	0	37	0	0	0	5

Warrant	AHV
1A - All	826
1B - Minor	45
2A - Major	780
2B - Cross	14

Warrant 1 - Minimum Vehicular Volume

	Approach Lanes	1		2 or more		Average Hourly Volume
1A	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	All Approaches	480	720	600	900	826
					% Fulfilled	114.7%

	Approach Lanes	1		2 or more		Average Hourly Volume
1B	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Minor Street Approaches	180	255	180	255	45
					% Fulfilled	17.7%

Warrant 2 - Delay To Cross Traffic

	Approach Lanes	1		2 or more		Average Hourly Volume
2A	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Major Street Approaches	480	720	600	900	780
					% Fulfilled	108.4%

	Approach Lanes	1		2 or more		Average Hourly Volume
2B	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Traffic Crossing Major Street	50	75	50	75	14
					% Fulfilled	18.3%

Signal Justification Calculation for Forecasted Volumes
(OTM Book 12 - Justification 7)

Horizon Year: Total - 2030
Region/City/Township: Fergus, Centre Wellington

Major Street: Highway 6/St. David Street
Minor Street: Sideroad 19

North/South?: Y

Number of Approach Lanes: 1
Tee Intersection? Y
Flow Conditions: Restricted

PM Forecast Only? N

Warrant Results		
150% Satisfied	No	Justification for new intersections with forecast traffic
120% Satisfied	No	Justification for existing intersections with forecast traffic

	Major Street						Minor Street						
	Highway 6/St. David Street						Sideroad 19						
	Northbound			Southbound			Eastbound			Westbound			Peds Crossing
Time Period	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Main Road
AM Peak Hour	25	536			835	28	14		61				10
PM Peak Hour	87	929			685	64	31		73				10
Average Hourly Volume	28	366	0	0	380	23	11	0	34	0	0	0	5

Warrant	AHV
1A - All	842
1B - Minor	45
2A - Major	797
2B - Cross	16

Warrant 1 - Minimum Vehicular Volume

	Approach Lanes	1		2 or more		Average Hourly Volume
1A	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	All Approaches	480	720	600	900	842
					% Fulfilled	116.9%

	Approach Lanes	1		2 or more		Average Hourly Volume
1B	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Minor Street Approaches	180	255	180	255	45
					% Fulfilled	17.5%

Warrant 2 - Delay To Cross Traffic

	Approach Lanes	1		2 or more		Average Hourly Volume
2A	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Major Street Approaches	480	720	600	900	797
					% Fulfilled	110.7%

	Approach Lanes	1		2 or more		Average Hourly Volume
2B	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Traffic Crossing Major Street	50	75	50	75	16
					% Fulfilled	21.7%

Signal Justification Calculation for Forecasted Volumes
(OTM Book 12 - Justification 7)

Horizon Year: Total - 2035
Region/City/Township: Fergus, Centre Wellington

Major Street: Highway 6/St. David Street
Minor Street: Sideroad 19

North/South?: Y

Number of Approach Lanes: 1
Tee Intersection? Y
Flow Conditions: Restricted

PM Forecast Only? N

Warrant Results		
150% Satisfied	No	Justification for new intersections with forecast traffic
120% Satisfied	No	Justification for existing intersections with forecast traffic

	Major Street						Minor Street						
	Highway 6/St. David Street						Sideroad 19						
	Northbound			Southbound			Eastbound			Westbound			Peds Crossing
Time Period	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Main Road
AM Peak Hour	27	557			862	29	15		63				10
PM Peak Hour	91	960			708	67	32		76				10
Average Hourly Volume	30	379	0	0	393	24	12	0	35	0	0	0	5

Warrant	AHV
1A - All	872
1B - Minor	47
2A - Major	825
2B - Cross	17

Warrant 1 - Minimum Vehicular Volume

	Approach Lanes	1		2 or more		Average Hourly Volume
1A	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	All Approaches	480	720	600	900	872
					% Fulfilled	121.1%

	Approach Lanes	1		2 or more		Average Hourly Volume
1B	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Minor Street Approaches	180	255	180	255	47
					% Fulfilled	18.2%

Warrant 2 - Delay To Cross Traffic

	Approach Lanes	1		2 or more		Average Hourly Volume
2A	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Major Street Approaches	480	720	600	900	825
					% Fulfilled	114.6%

	Approach Lanes	1		2 or more		Average Hourly Volume
2B	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Traffic Crossing Major Street	50	75	50	75	17
					% Fulfilled	22.3%

Signal Justification Calculation for Forecasted Volumes
(OTM Book 12 - Justification 7)

Horizon Year: Total - 2040
Region/City/Township: Fergus, Centre Wellington

Major Street: Highway 6/St. David Street
Minor Street: Sideroad 19

North/South?: Y

Number of Approach Lanes: 1
Tee Intersection? Y
Flow Conditions: Restricted

PM Forecast Only? N

Warrant Results		
150% Satisfied	No	Justification for new intersections with forecast traffic
120% Satisfied	No	Justification for existing intersections with forecast traffic

	Major Street						Minor Street						
	Highway 6/St. David Street						Sideroad 19						
	Northbound			Southbound			Eastbound			Westbound			Peds Crossing
Time Period	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Main Road
AM Peak Hour	28	579			890	30	15		66				10
PM Peak Hour	95	993			733	70	33		80				10
Average Hourly Volume	31	393	0	0	406	25	12	0	37	0	0	0	5

Warrant	AHV
1A - All	903
1B - Minor	49
2A - Major	855
2B - Cross	17

Warrant 1 - Minimum Vehicular Volume

	Approach Lanes	1		2 or more		Average Hourly Volume
1A	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	All Approaches	480	720	600	900	903
					% Fulfilled	125.4%

	Approach Lanes	1		2 or more		Average Hourly Volume
1B	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Minor Street Approaches	180	255	180	255	49
					% Fulfilled	19.0%

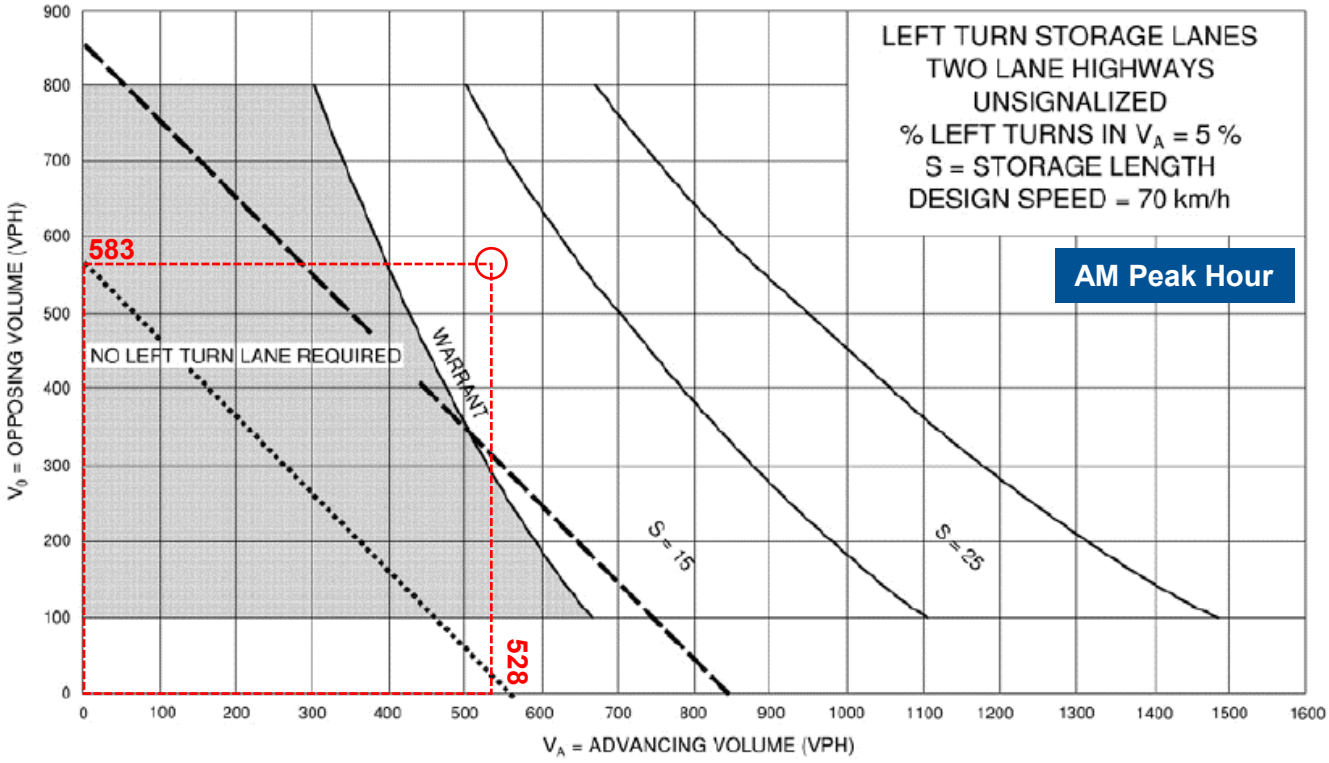
Warrant 2 - Delay To Cross Traffic

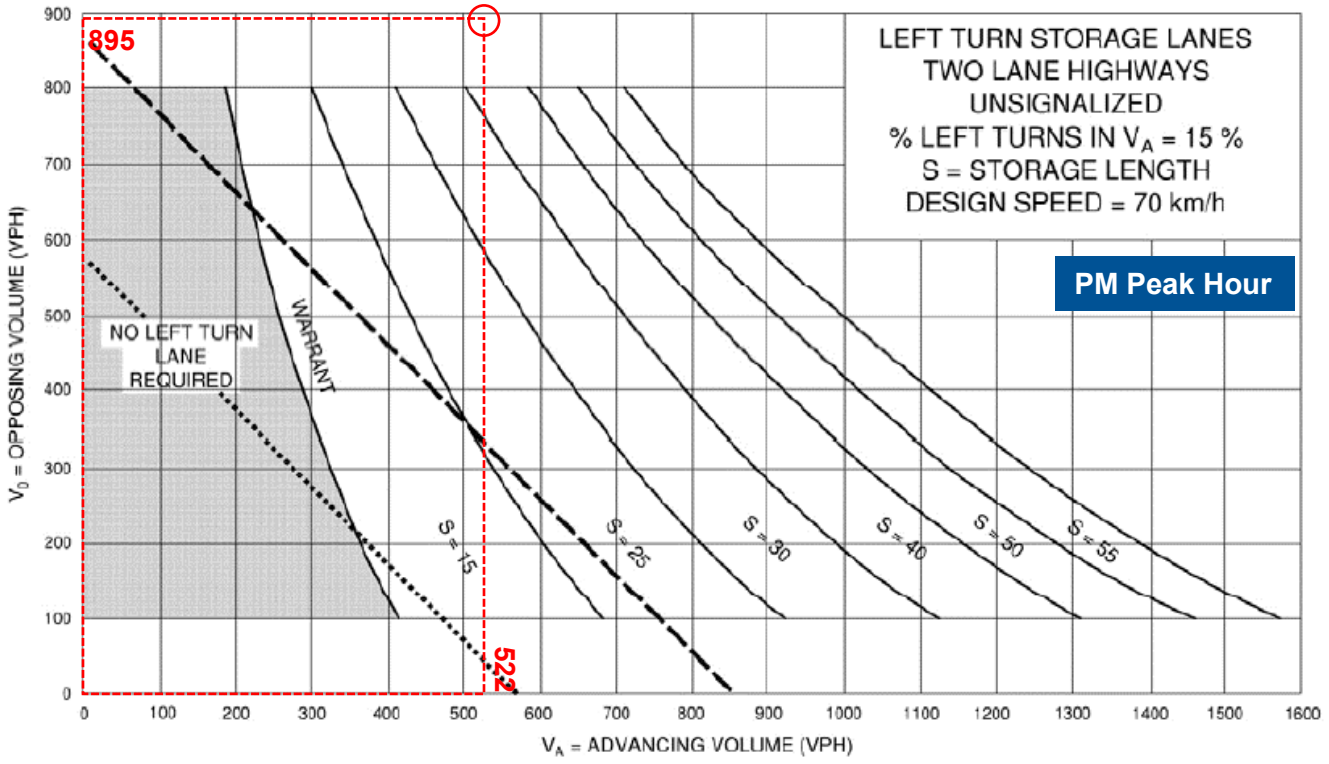
	Approach Lanes	1		2 or more		Average Hourly Volume
2A	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Major Street Approaches	480	720	600	900	855
					% Fulfilled	118.7%

	Approach Lanes	1		2 or more		Average Hourly Volume
2B	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Traffic Crossing Major Street	50	75	50	75	17
					% Fulfilled	22.7%

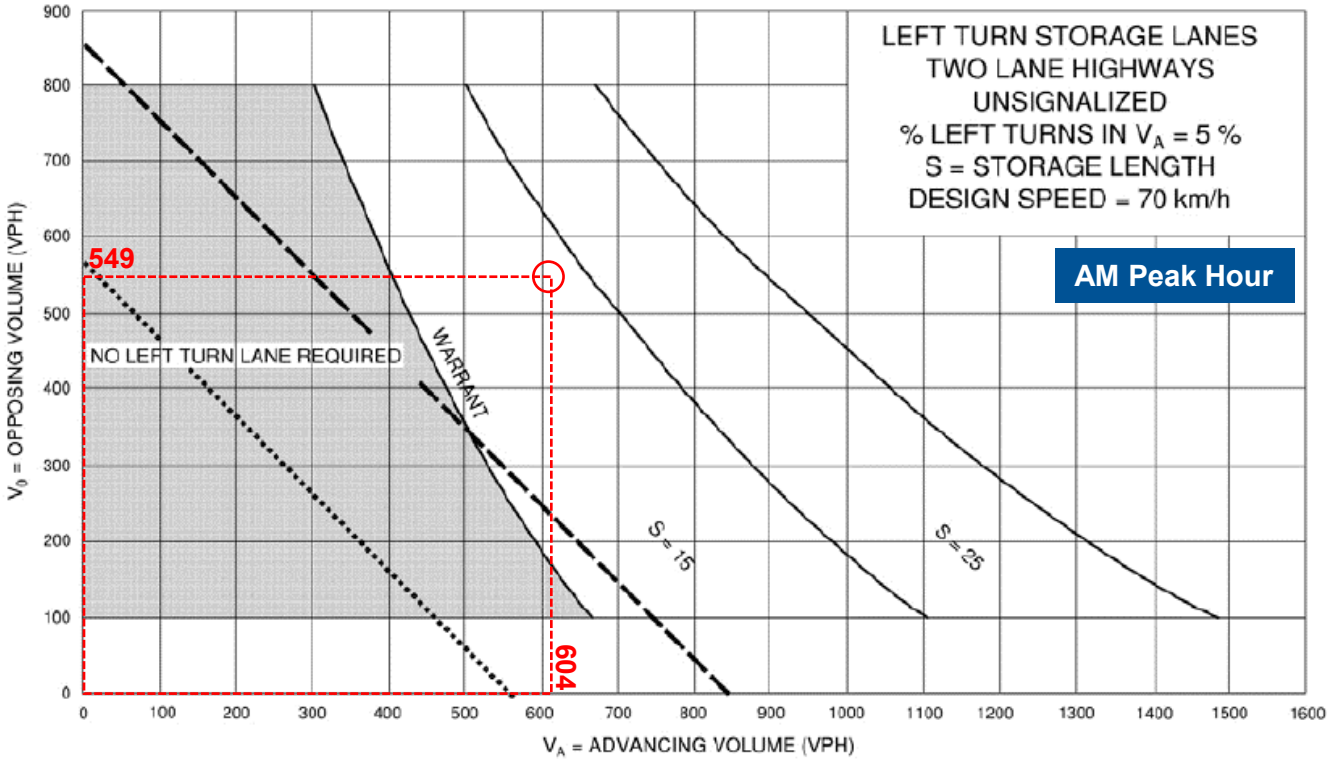
Appendix I

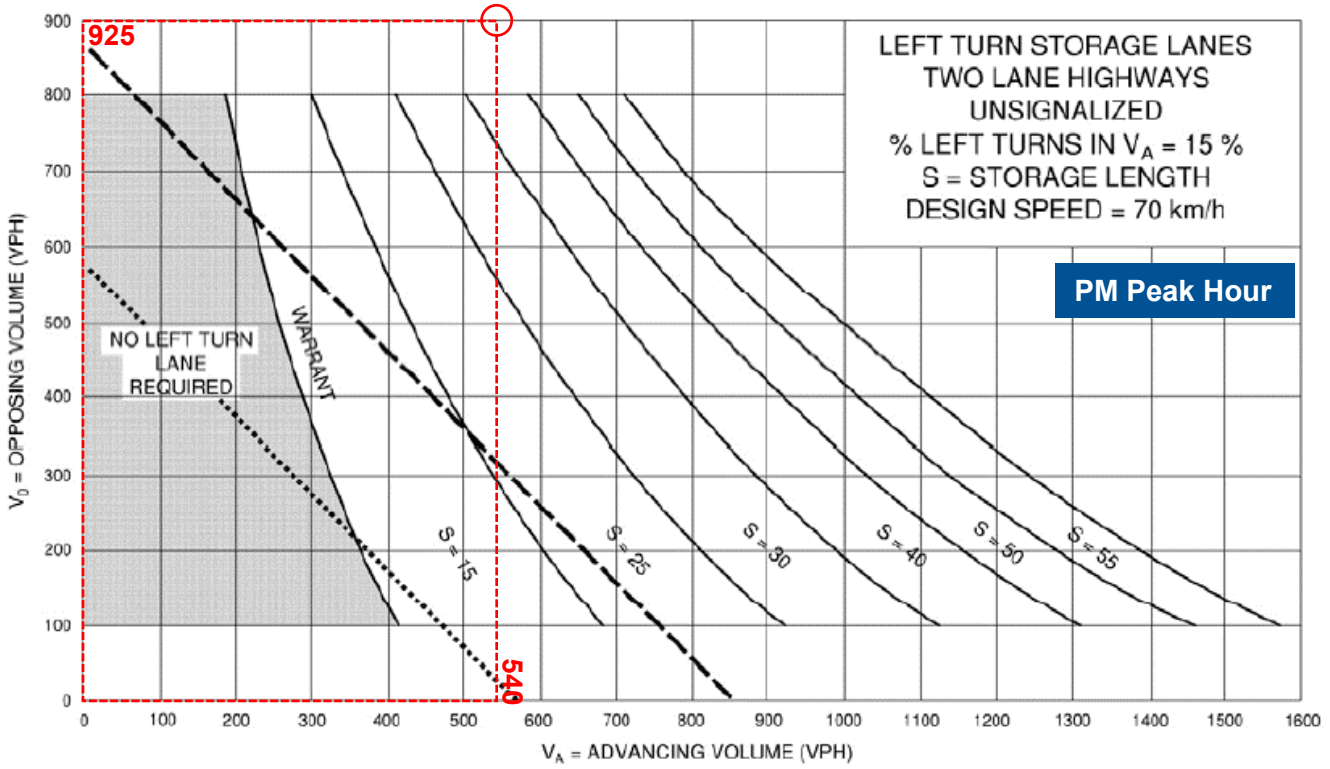
Left-Turn Lane Warrant Nomographs





Left-Turn Lane Warrant Nomographs
Highway 6 Southbound at Street B
2030 Total Traffic

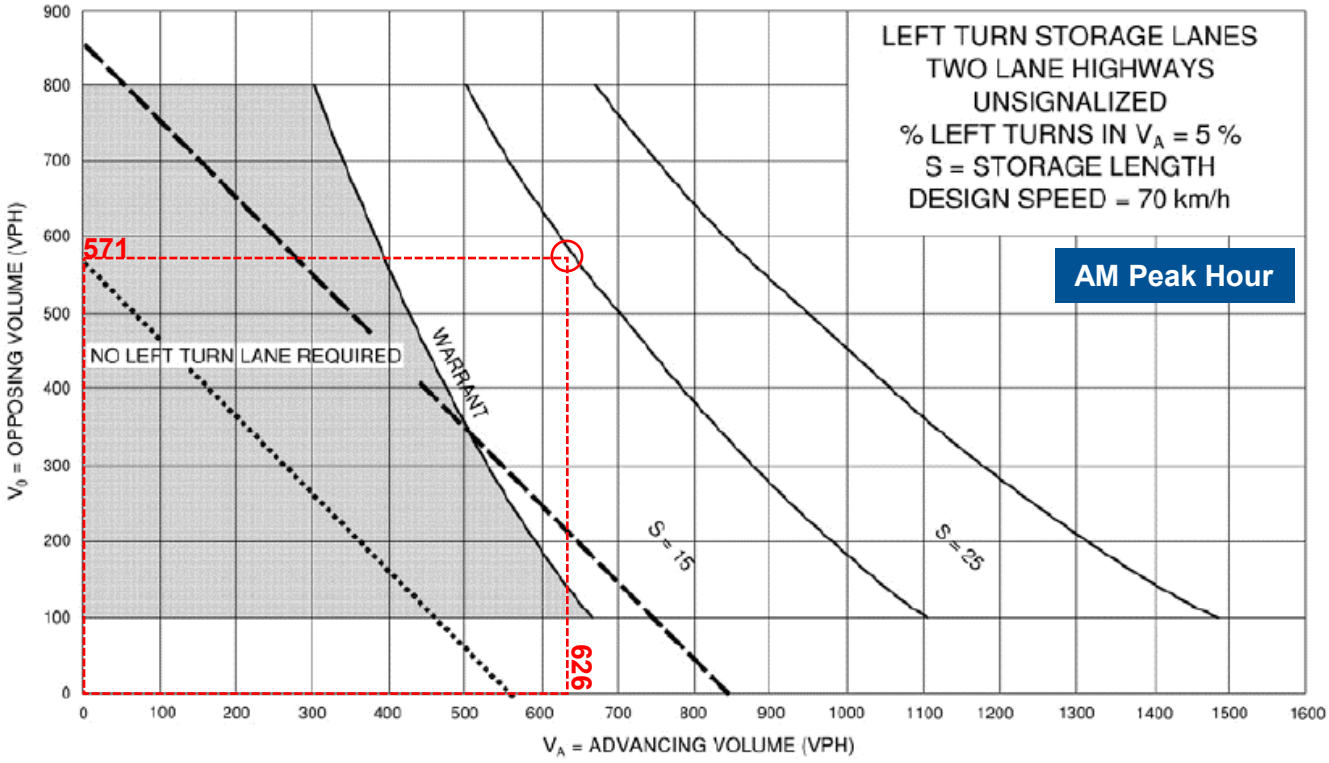


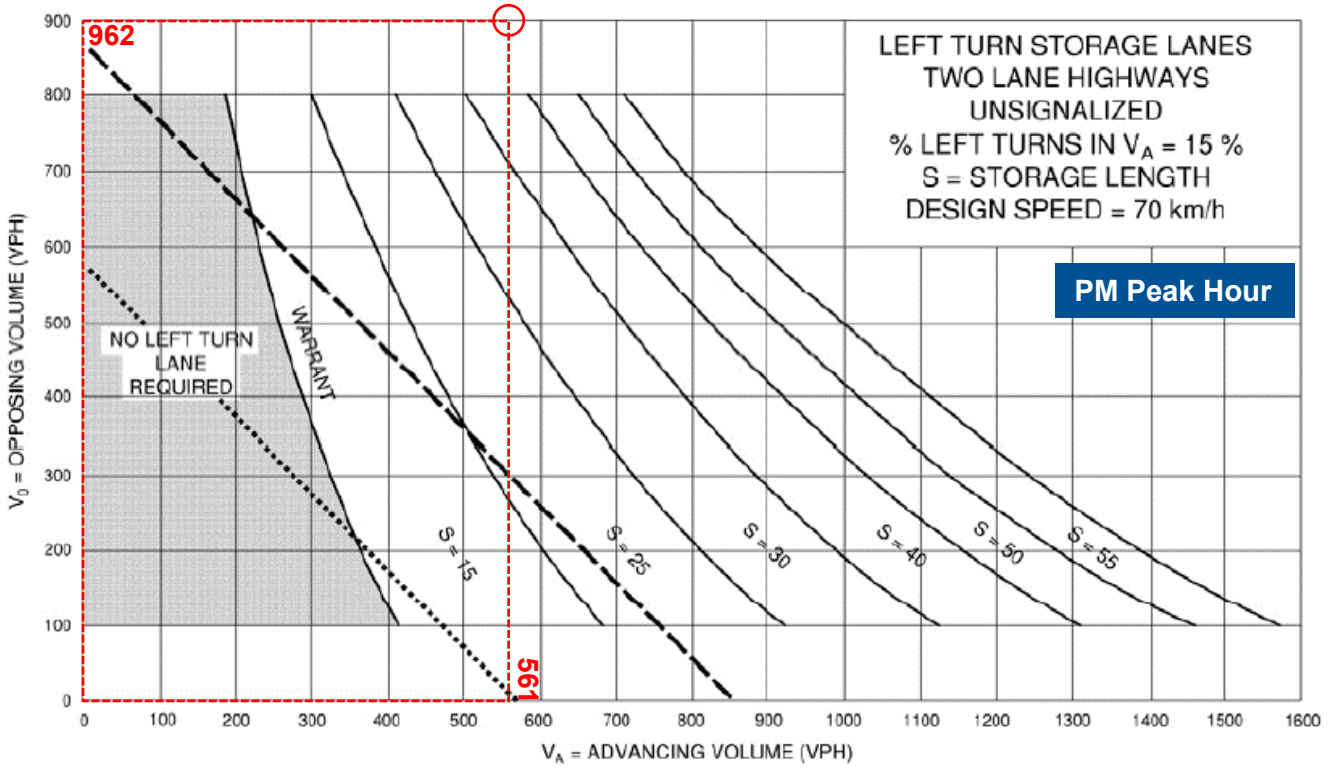


Left-Turn Lane Warrant Nomographs
Highway 6 Southbound at Street B
2035 Total Traffic

968 St. David Street, Fergus
230599

Figure 1B





Left-Turn Lane Warrant Nomographs
Highway 6 Southbound at Street B
2040 Total Traffic

968 St. David Street, Fergus
230599

Figure 1C

Appendix J

2040 Total with Improvements Operation Synchro Reports

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	25	146	141	330	480	27
Future Volume (vph)	25	146	141	330	480	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.885				0.993	
Flt Protected	0.993		0.950			
Satd. Flow (prot)	1588	0	1770	1667	1814	0
Flt Permitted	0.993		0.950			
Satd. Flow (perm)	1588	0	1770	1667	1814	0
Link Speed (k/h)	80			80	80	
Link Distance (m)	1005.9			640.4	1036.6	
Travel Time (s)	45.3			28.8	46.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	6%	2%	14%	4%	4%
Adj. Flow (vph)	27	159	153	359	522	29
Shared Lane Traffic (%)						
Lane Group Flow (vph)	186	0	153	359	551	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	55.1%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	25	146	141	330	480	27
Future Volume (Veh/h)	25	146	141	330	480	27
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	27	159	153	359	522	29
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1202	536	551			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1202	536	551			
tC, single (s)	6.4	6.3	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.4	2.2			
p0 queue free %	85	70	85			
cM capacity (veh/h)	175	537	1019			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	186	153	359	551
Volume Left	27	153	0	0
Volume Right	159	0	0	29
cSH	413	1019	1700	1700
Volume to Capacity	0.45	0.15	0.21	0.32
Queue Length 95th (m)	18.2	4.2	0.0	0.0
Control Delay (s)	20.7	9.2	0.0	0.0
Lane LOS	C	A		
Approach Delay (s)	20.7	2.7		0.0
Approach LOS	C			

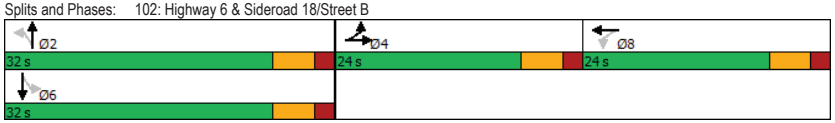
Intersection Summary				
Average Delay		4.2		
Intersection Capacity Utilization		55.1%	ICU Level of Service	B
Analysis Period (min)		15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	4	188	87	7	51	120	407	44	26	579	21
Future Volume (vph)	13	4	188	87	7	51	120	407	44	26	579	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	25.0		0.0	25.0		0.0	110.0		0.0	100.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	50.0			50.0			75.0			75.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.853			0.869			0.985			0.995	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1574	0	1770	1619	0	1626	3229	0	1770	3371	0
Flt Permitted	0.950			0.628			0.355			0.467		
Satd. Flow (perm)	1805	1574	0	1170	1619	0	608	3229	0	870	3371	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		204			55			15			5	
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		1004.3			182.5			419.5			285.9	
Travel Time (s)		72.3			13.1			25.2			17.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	2%	3%	2%	2%	2%	11%	11%	2%	2%	6%	22%
Adj. Flow (vph)	14	4	204	95	8	55	130	442	48	28	629	23
Shared Lane Traffic (%)												
Lane Group Flow (vph)	14	208	0	95	63	0	130	490	0	28	652	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane								Yes				
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Split	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	4	4			8			2			6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases				8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		20.0	20.0		20.0	20.0	
Minimum Split (s)	24.0	24.0		24.0	24.0		26.0	26.0		26.0	26.0	
Total Split (s)	24.0	24.0		24.0	24.0		32.0	32.0		32.0	32.0	
Total Split (%)	30.0%	30.0%		30.0%	30.0%		40.0%	40.0%		40.0%	40.0%	
Maximum Green (s)	18.0	18.0		18.0	18.0		26.0	26.0		26.0	26.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	10.7	10.7		11.9	11.9		23.6	23.6		23.6	23.6	
Actuated g/C Ratio	0.18	0.18		0.20	0.20		0.39	0.39		0.39	0.39	
v/c Ratio	0.04	0.47		0.41	0.17		0.55	0.38		0.08	0.49	
Control Delay	25.0	8.8		29.8	10.0		28.1	15.2		14.8	16.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	25.0	8.8		29.8	10.0		28.1	15.2		14.8	16.7	
LOS	C	A		C	A		C	B		B	B	
Approach Delay		9.8			21.9			17.9			16.6	
Approach LOS		A			C			B			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 60.2			
Natural Cycle: 80			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.55			
Intersection Signal Delay: 16.7		Intersection LOS: B	
Intersection Capacity Utilization 73.5%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 102: Highway 6 & Sideroad 18/Street B



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	14	208	95	63	130	490	28	652
v/c Ratio	0.04	0.47	0.41	0.17	0.55	0.38	0.08	0.49
Control Delay	25.0	8.8	29.8	10.0	28.1	15.2	14.8	16.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.0	8.8	29.8	10.0	28.1	15.2	14.8	16.7
Queue Length 50th (m)	1.5	0.4	10.6	0.8	11.9	21.1	2.1	30.3
Queue Length 95th (m)	6.4	17.6	24.8	10.0	#38.5	38.6	7.9	53.2
Internal Link Dist (m)		980.3		158.5		395.5		261.9
Turn Bay Length (m)	25.0		25.0		110.0		100.0	
Base Capacity (vph)	558	627	361	538	271	1450	388	1508
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.33	0.26	0.12	0.48	0.34	0.07	0.43

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	4	188	87	7	51	120	407	44	26	579	21
Future Volume (vph)	13	4	188	87	7	51	120	407	44	26	579	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.85		1.00	0.87		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	1574		1770	1619		1626	3230		1770	3370	
Flt Permitted	0.95	1.00		0.63	1.00		0.35	1.00		0.47	1.00	
Satd. Flow (perm)	1805	1574		1169	1619		607	3230		870	3370	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	14	4	204	95	8	55	130	442	48	28	629	23
RTOR Reduction (vph)	0	168	0	0	47	0	0	9	0	0	3	0
Lane Group Flow (vph)	14	40	0	95	16	0	130	481	0	28	649	0
Heavy Vehicles (%)	0%	2%	3%	2%	2%	2%	11%	11%	2%	2%	6%	22%
Turn Type	Split	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	4	4			8			2			6	
Permitted Phases				8			2			6		
Actuated Green, G (s)	10.7	10.7		9.0	9.0		23.6	23.6		23.6	23.6	
Effective Green, g (s)	10.7	10.7		9.0	9.0		23.6	23.6		23.6	23.6	
Actuated g/C Ratio	0.17	0.17		0.15	0.15		0.38	0.38		0.38	0.38	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	315	274		171	237		233	1243		334	1297	
v/s Ratio Prot	0.01	c0.03			0.01			0.15			0.19	
v/s Ratio Perm				c0.08			c0.21			0.03		
v/c Ratio	0.04	0.14		0.56	0.07		0.56	0.39		0.08	0.50	
Uniform Delay, d1	21.0	21.4		24.3	22.5		14.8	13.6		12.0	14.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	0.2		3.9	0.1		2.9	0.2		0.1	0.3	
Delay (s)	21.1	21.7		28.2	22.7		17.6	13.8		12.1	14.7	
Level of Service	C	C		C	C		B	B		B	B	
Approach Delay (s)		21.6			26.0			14.6			14.6	
Approach LOS		C			C			B			B	

Intersection Summary				
HCM 2000 Control Delay	16.6	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.45			
Actuated Cycle Length (s)	61.3	Sum of lost time (s)	18.0	
Intersection Capacity Utilization	73.5%	ICU Level of Service	D	
Analysis Period (min)	15			
c Critical Lane Group				

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	15	66	28	579	890	30
Future Volume (vph)	15	66	28	579	890	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	20.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		15.0			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt	0.890				0.995	
Flt Protected	0.991		0.950			
Satd. Flow (prot)	1549	0	1583	3282	3476	0
Flt Permitted	0.991		0.950			
Satd. Flow (perm)	1549	0	1583	3282	3476	0
Link Speed (k/h)	50			50	60	
Link Distance (m)	1002.3			98.3	419.5	
Travel Time (s)	72.2			7.1	25.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	10%	14%	10%	3%	13%
Adj. Flow (vph)	16	72	30	629	967	33
Shared Lane Traffic (%)						
Lane Group Flow (vph)	88	0	30	629	1000	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane				Yes	Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 37.1%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	15	66	28	579	890	30
Future Volume (Veh/h)	15	66	28	579	890	30
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	16	72	30	629	967	33
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				TWLTL	TWLTL	
Median storage veh)				2	2	
Upstream signal (m)				98		
pX, platoon unblocked	0.94					
vC, conflicting volume	1358	500	1000			
vC1, stage 1 conf vol	984					
vC2, stage 2 conf vol	374					
vCu, unblocked vol	1245	500	1000			
tC, single (s)	6.8	7.1	4.4			
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.4	2.3			
p0 queue free %	95	85	95			
cM capacity (veh/h)	308	496	620			

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	88	30	314	314	645	355
Volume Left	16	30	0	0	0	0
Volume Right	72	0	0	0	0	33
cSH	446	620	1700	1700	1700	1700
Volume to Capacity	0.20	0.05	0.18	0.18	0.38	0.21
Queue Length 95th (m)	5.8	1.2	0.0	0.0	0.0	0.0
Control Delay (s)	15.0	11.1	0.0	0.0	0.0	0.0
Lane LOS	C	B				
Approach Delay (s)	15.0	0.5			0.0	
Approach LOS	C					

Intersection Summary				
Average Delay		0.9		
Intersection Capacity Utilization		37.1%	ICU Level of Service	A
Analysis Period (min)		15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	9	16	98	6	236	27	359	96	412	519	10
Future Volume (vph)	2	9	16	98	6	236	27	359	96	412	519	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0		0.0	25.0		0.0	20.0		0.0	25.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	20.0			70.0			60.0			15.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor		0.99		1.00			1.00	1.00		1.00	1.00	
Frt		0.906			0.854			0.968			0.997	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1704	0	1787	1416	0	1736	3228	0	1612	3462	0
Flt Permitted	0.489			0.740			0.436			0.376		
Satd. Flow (perm)	929	1704	0	1387	1416	0	794	3228	0	637	3462	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		17			257			46			3	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		119.1			1012.2			564.4			98.3	
Travel Time (s)		8.6			72.9			40.6			7.1	
Confl. Peds. (#/hr)			3	3			6		3	3		6
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	1%	0%	15%	4%	9%	3%	12%	4%	0%
Adj. Flow (vph)	2	10	17	107	7	257	29	390	104	448	564	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	2	27	0	107	264	0	29	494	0	448	575	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	1.0	1.0		1.0	1.0		1.0	5.0		1.0	5.0	
Minimum Split (s)	25.0	25.0		25.0	25.0		5.0	35.0		5.0	35.0	
Total Split (s)	25.0	25.0		25.0	25.0		7.0	35.0		20.0	48.0	
Total Split (%)	31.3%	31.3%		31.3%	31.3%		8.8%	43.8%		25.0%	60.0%	
Maximum Green (s)	19.0	19.0		19.0	19.0		3.0	28.0		16.0	41.0	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.0	3.8		3.0	3.8	
All-Red Time (s)	2.3	2.3		2.3	2.3		1.0	3.2		1.0	3.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		4.0	7.0		4.0	7.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	5.0		2.0	5.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)	10.0	10.0		10.0	10.0			25.0			25.0	
Flash Dont Walk (s)	8.0	8.0		8.0	8.0			14.0			14.0	
Pedestrian Calls (#/hr)	0	0		0	0			0			0	
Act Effct Green (s)	9.9	9.9		9.9	9.9		22.0	15.8		35.5	25.2	
Actuated g/C Ratio	0.18	0.18		0.18	0.18		0.39	0.28		0.64	0.45	
v/c Ratio	0.01	0.09		0.43	0.57		0.08	0.52		0.72	0.37	
Control Delay	21.5	14.6		28.3	9.5		6.8	18.0		12.8	10.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	21.5	14.6		28.3	9.5		6.8	18.0		12.8	10.7	
LOS	C	B		C	A		A	B		B	B	
Approach Delay		15.0			14.9			17.4			11.6	
Approach LOS		B			B			B			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 55.8			
Natural Cycle: 65			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.72			
Intersection Signal Delay: 13.9		Intersection LOS: B	
Intersection Capacity Utilization 66.8%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 104: St David St & Gordon St

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	2	27	107	264	29	494	448	575
v/c Ratio	0.01	0.09	0.43	0.57	0.08	0.52	0.72	0.37
Control Delay	21.5	14.6	28.3	9.5	6.8	18.0	12.8	10.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.5	14.6	28.3	9.5	6.8	18.0	12.8	10.7
Queue Length 50th (m)	0.2	0.9	10.3	0.6	0.9	20.5	19.2	19.1
Queue Length 95th (m)	1.9	7.1	26.6	18.9	3.7	39.1	43.5	33.6
Internal Link Dist (m)		95.1		988.2		540.4		74.3
Turn Bay Length (m)	20.0		25.0		20.0		25.0	
Base Capacity (vph)	327	611	489	665	365	1699	695	2635
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.04	0.22	0.40	0.08	0.29	0.64	0.22

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	9	16	98	6	236	27	359	96	412	519	10
Future Volume (vph)	2	9	16	98	6	236	27	359	96	412	519	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		4.0	7.0		4.0	7.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.91		1.00	0.85		1.00	0.97		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	1705		1782	1416		1734	3230		1611	3462	
Flt Permitted	0.49	1.00		0.74	1.00		0.44	1.00		0.38	1.00	
Satd. Flow (perm)	929	1705		1388	1416		795	3230		638	3462	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2	10	17	107	7	257	29	390	104	448	564	11
RTOR Reduction (vph)	0	14	0	0	211	0	0	33	0	0	2	0
Lane Group Flow (vph)	2	13	0	107	53	0	29	461	0	448	573	0
Confl. Peds. (#/hr)			3	3			6		3	3		6
Heavy Vehicles (%)	0%	0%	0%	1%	0%	15%	4%	9%	3%	12%	4%	0%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	9.9	9.9		9.9	9.9		18.9	15.8		32.3	25.2	
Effective Green, g (s)	9.9	9.9		9.9	9.9		18.9	15.8		32.3	25.2	
Actuated g/C Ratio	0.18	0.18		0.18	0.18		0.34	0.29		0.59	0.46	
Clearance Time (s)	6.0	6.0		6.0	6.0		4.0	7.0		4.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	5.0		2.0	5.0	
Lane Grp Cap (vph)	166	305		248	253		324	924		593	1580	
v/s Ratio Prot		0.01			0.04		0.01	0.14		c0.17	0.17	
v/s Ratio Perm	0.00			c0.08			0.03			c0.27		
v/c Ratio	0.01	0.04		0.43	0.21		0.09	0.50		0.76	0.36	
Uniform Delay, d1	18.6	18.7		20.1	19.3		12.1	16.4		6.9	9.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	0.1		1.2	0.4		0.0	0.9		4.9	0.3	
Delay (s)	18.7	18.8		21.4	19.7		12.2	17.3		11.8	10.1	
Level of Service	B	B		C	B		B	B		B	B	
Approach Delay (s)		18.8			20.2			17.0			10.8	
Approach LOS		B			C			B			B	

Intersection Summary				
HCM 2000 Control Delay	14.4	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.73			
Actuated Cycle Length (s)	55.2	Sum of lost time (s)	17.0	
Intersection Capacity Utilization	66.8%	ICU Level of Service	C	
Analysis Period (min)	15			

c Critical Lane Group

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	26	172	165	579	389	26
Future Volume (vph)	26	172	165	579	389	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.883				0.992	
Flt Protected	0.994		0.950			
Satd. Flow (prot)	1668	0	1805	1881	1817	0
Flt Permitted	0.994		0.950			
Satd. Flow (perm)	1668	0	1805	1881	1817	0
Link Speed (k/h)	80			80	80	
Link Distance (m)	1005.9			641.1	1036.6	
Travel Time (s)	45.3			28.8	46.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	1%	4%	0%
Adj. Flow (vph)	28	187	179	629	423	28
Shared Lane Traffic (%)						
Lane Group Flow (vph)	215	0	179	629	451	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	53.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	26	172	165	579	389	26
Future Volume (Veh/h)	26	172	165	579	389	26
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	28	187	179	629	423	28
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1424	437	451			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1424	437	451			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	78	70	84			
cM capacity (veh/h)	127	624	1120			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	215	179	629	451
Volume Left	28	179	0	0
Volume Right	187	0	0	28
cSH	413	1120	1700	1700
Volume to Capacity	0.52	0.16	0.37	0.27
Queue Length 95th (m)	23.3	4.5	0.0	0.0
Control Delay (s)	22.8	8.8	0.0	0.0
Lane LOS	C	A		
Approach Delay (s)	22.8	2.0		0.0
Approach LOS	C			

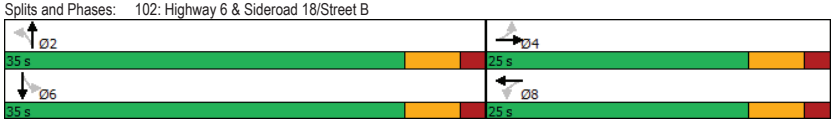
Intersection Summary				
Average Delay		4.4		
Intersection Capacity Utilization		53.3%	ICU Level of Service	A
Analysis Period (min)		15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	9	170	87	6	64	164	675	123	74	475	12
Future Volume (vph)	6	9	170	87	6	64	164	675	123	74	475	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	25.0		0.0	25.0		0.0	110.0		0.0	100.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	50.0			50.0			75.0			75.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor							1.00				1.00	
Frt		0.858			0.864			0.977			0.996	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1629	0	1770	1609	0	1787	3487	0	1770	3491	0
Flt Permitted	0.707			0.635			0.456			0.313		
Satd. Flow (perm)	1343	1629	0	1183	1609	0	856	3487	0	583	3491	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		185			70			48			6	
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		1004.3			251.3			419.5			285.9	
Travel Time (s)		72.3			18.1			25.2			17.2	
Confl. Peds. (#/hr)							3					3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	2%	0%	2%	2%	2%	1%	1%	2%	2%	3%	0%
Adj. Flow (vph)	7	10	185	95	7	70	178	734	134	80	516	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	7	195	0	95	77	0	178	868	0	80	529	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane								Yes				
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		20.0	20.0		20.0	20.0	
Minimum Split (s)	24.0	24.0		24.0	24.0		26.0	26.0		26.0	26.0	
Total Split (s)	25.0	25.0		25.0	25.0		35.0	35.0		35.0	35.0	
Total Split (%)	41.7%	41.7%		41.7%	41.7%		58.3%	58.3%		58.3%	58.3%	
Maximum Green (s)	19.0	19.0		19.0	19.0		29.0	29.0		29.0	29.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	10.7	10.7		10.7	10.7		25.6	25.6		25.6	25.6	
Actuated g/C Ratio	0.24	0.24		0.24	0.24		0.59	0.59		0.59	0.59	
v/c Ratio	0.02	0.36		0.33	0.17		0.36	0.42		0.23	0.26	
Control Delay	13.5	5.6		17.7	6.3		10.3	7.5		9.5	6.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	13.5	5.6		17.7	6.3		10.3	7.5		9.5	6.8	
LOS	B	A		B	A		B	A		A	A	
Approach Delay		5.9			12.6			8.0			7.2	
Approach LOS		A			B			A			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 43.7			
Natural Cycle: 50			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.42			
Intersection Signal Delay: 7.9		Intersection LOS: A	
Intersection Capacity Utilization 78.6%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 102: Highway 6 & Sideroad 18/Street B



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	7	195	95	77	178	868	80	529
v/c Ratio	0.02	0.36	0.33	0.17	0.36	0.42	0.23	0.26
Control Delay	13.5	5.6	17.7	6.3	10.3	7.5	9.5	6.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.5	5.6	17.7	6.3	10.3	7.5	9.5	6.8
Queue Length 50th (m)	0.4	0.6	6.0	0.4	8.0	20.1	3.3	11.5
Queue Length 95th (m)	2.8	12.7	17.6	8.1	23.2	37.5	11.8	22.3
Internal Link Dist (m)		980.3		227.3		395.5		261.9
Turn Bay Length (m)	25.0		25.0		110.0		100.0	
Base Capacity (vph)	588	817	518	744	622	2548	423	2540
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.24	0.18	0.10	0.29	0.34	0.19	0.21

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	9	170	87	6	64	164	675	123	74	475	12
Future Volume (vph)	6	9	170	87	6	64	164	675	123	74	475	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.86		1.00	0.86		1.00	0.98		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	1628		1770	1609		1784	3486		1770	3492	
Flt Permitted	0.71	1.00		0.64	1.00		0.46	1.00		0.31	1.00	
Satd. Flow (perm)	1343	1628		1183	1609		856	3486		583	3492	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	7	10	185	95	7	70	178	734	134	80	516	13
RTOR Reduction (vph)	0	150	0	0	57	0	0	22	0	0	3	0
Lane Group Flow (vph)	7	45	0	95	20	0	178	846	0	80	526	0
Confl. Peds. (#/hr)							3					3
Heavy Vehicles (%)	0%	2%	0%	2%	2%	2%	1%	1%	2%	2%	3%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	8.6	8.6		8.6	8.6		24.3	24.3		24.3	24.3	
Effective Green, g (s)	8.6	8.6		8.6	8.6		24.3	24.3		24.3	24.3	
Actuated g/C Ratio	0.19	0.19		0.19	0.19		0.54	0.54		0.54	0.54	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	257	311		226	308		463	1886		315	1889	
v/s Ratio Prot		0.03			0.01			c0.24			0.15	
v/s Ratio Perm	0.01			c0.08			0.21			0.14		
v/c Ratio	0.03	0.15		0.42	0.07		0.38	0.45		0.25	0.28	
Uniform Delay, d1	14.8	15.1		16.0	14.9		6.0	6.2		5.5	5.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	0.2		1.3	0.1		0.5	0.2		0.4	0.1	
Delay (s)	14.8	15.3		17.2	15.0		6.5	6.4		5.9	5.6	
Level of Service	B	B		B	B		A	A		A	A	
Approach Delay (s)		15.3			16.2			6.4			5.7	
Approach LOS		B			B			A			A	

Intersection Summary				
HCM 2000 Control Delay	7.9	HCM 2000 Level of Service	A	
HCM 2000 Volume to Capacity ratio	0.44			
Actuated Cycle Length (s)	44.9	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	78.6%	ICU Level of Service	D	
Analysis Period (min)	15			

c Critical Lane Group

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	33	80	95	993	733	70
Future Volume (vph)	33	80	95	993	733	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	20.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		15.0			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt	0.905				0.987	
Flt Protected	0.986		0.950			
Satd. Flow (prot)	1545	0	1583	3275	3417	0
Flt Permitted	0.986		0.950			
Satd. Flow (perm)	1545	0	1583	3275	3417	0
Link Speed (k/h)	50			50	60	
Link Distance (m)	1002.3			98.3	419.5	
Travel Time (s)	72.2			7.1	25.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	10%	14%	10%	3%	13%
Bus Blockages (#/hr)	6	1	0	1	2	0
Adj. Flow (vph)	36	87	103	1079	797	76
Shared Lane Traffic (%)						
Lane Group Flow (vph)	123	0	103	1079	873	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane				Yes	Yes	
Headway Factor	1.03	1.00	1.00	1.00	1.01	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	44.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	33	80	95	993	733	70
Future Volume (Veh/h)	33	80	95	993	733	70
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	36	87	103	1079	797	76
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				TWLTL	TWLTL	
Median storage veh)				2	2	
Upstream signal (m)				98		
pX, platoon unblocked	0.84					
vC, conflicting volume	1580	436	873			
vC1, stage 1 conf vol	835					
vC2, stage 2 conf vol	746					
vCu, unblocked vol	1313	436	873			
tC, single (s)	6.8	7.1	4.4			
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.4	2.3			
p0 queue free %	89	84	85			
cM capacity (veh/h)	320	546	697			

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	123	103	540	540	531	342
Volume Left	36	103	0	0	0	0
Volume Right	87	0	0	0	0	76
cSH	453	697	1700	1700	1700	1700
Volume to Capacity	0.27	0.15	0.32	0.32	0.31	0.20
Queue Length 95th (m)	8.7	4.1	0.0	0.0	0.0	0.0
Control Delay (s)	15.9	11.1	0.0	0.0	0.0	0.0
Lane LOS	C	B				
Approach Delay (s)	15.9	1.0			0.0	
Approach LOS	C					

Intersection Summary				
Average Delay	1.4			
Intersection Capacity Utilization	44.5%	ICU Level of Service		A
Analysis Period (min)	15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	41	94	121	63	426	131	612	123	295	490	16
Future Volume (vph)	34	41	94	121	63	426	131	612	123	295	490	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0		0.0	25.0		0.0	20.0		0.0	25.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	20.0			70.0			60.0			15.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor		0.99		0.99			1.00	1.00		1.00	1.00	
Frt		0.896			0.869			0.975			0.995	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1666	0	1736	1633	0	1805	3437	0	1736	3488	0
Flt Permitted	0.253			0.663			0.446			0.220		
Satd. Flow (perm)	481	1666	0	1202	1633	0	846	3437	0	402	3488	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		102			309			33			5	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		119.1			1012.2			564.4			98.3	
Travel Time (s)		8.6			72.9			40.6			7.1	
Confl. Peds. (#/hr)			7	7			4		3	3		4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	1%	4%	2%	1%	0%	2%	2%	4%	3%	0%
Adj. Flow (vph)	37	45	102	132	68	463	142	665	134	321	533	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	37	147	0	132	531	0	142	799	0	321	550	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	1.0	1.0		1.0	1.0		1.0	5.0		1.0	5.0	
Minimum Split (s)	25.0	25.0		25.0	25.0		5.0	35.0		5.0	35.0	
Total Split (s)	28.0	28.0		28.0	28.0		10.0	36.0		16.0	42.0	
Total Split (%)	35.0%	35.0%		35.0%	35.0%		12.5%	45.0%		20.0%	52.5%	
Maximum Green (s)	22.0	22.0		22.0	22.0		6.0	29.0		12.0	35.0	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.0	3.8		3.0	3.8	
All-Red Time (s)	2.3	2.3		2.3	2.3		1.0	3.2		1.0	3.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		4.0	7.0		4.0	7.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	5.0		2.0	5.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)	10.0	10.0		10.0	10.0			25.0			25.0	
Flash Dont Walk (s)	8.0	8.0		8.0	8.0			14.0			14.0	
Pedestrian Calls (#/hr)	0	0		0	0			0			0	
Act Effct Green (s)	15.8	15.8		15.8	15.8		32.5	23.4		40.1	27.7	
Actuated g/C Ratio	0.24	0.24		0.24	0.24		0.48	0.35		0.60	0.41	
v/c Ratio	0.33	0.31		0.47	0.86		0.29	0.66		0.72	0.38	
Control Delay	31.6	10.9		29.4	25.9		8.8	21.4		18.8	14.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	31.6	10.9		29.4	25.9		8.8	21.4		18.8	14.9	
LOS	C	B		C	C		A	C		B	B	
Approach Delay		15.1			26.6			19.5			16.3	
Approach LOS		B			C			B			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 67.2			
Natural Cycle: 70			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.86			
Intersection Signal Delay: 19.9		Intersection LOS: B	
Intersection Capacity Utilization 90.4%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 104: St David St & Gordon St

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	37	147	132	531	142	799	321	550
v/c Ratio	0.33	0.31	0.47	0.86	0.29	0.66	0.72	0.38
Control Delay	31.6	10.9	29.4	25.9	8.8	21.4	18.8	14.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.6	10.9	29.4	25.9	8.8	21.4	18.8	14.9
Queue Length 50th (m)	4.2	4.9	15.7	28.7	7.5	47.0	19.3	26.4
Queue Length 95th (m)	13.5	19.2	33.4	#85.7	16.5	71.5	#51.3	41.5
Internal Link Dist (m)		95.1		988.2		540.4		74.3
Turn Bay Length (m)	20.0		25.0		20.0		25.0	
Base Capacity (vph)	164	637	411	762	502	1568	494	1901
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.23	0.32	0.70	0.28	0.51	0.65	0.29

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	41	94	121	63	426	131	612	123	295	490	16
Future Volume (vph)	34	41	94	121	63	426	131	612	123	295	490	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		4.0	7.0		4.0	7.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		0.99	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.90		1.00	0.87		1.00	0.97		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	1668		1725	1633		1804	3437		1735	3489	
Flt Permitted	0.25	1.00		0.66	1.00		0.45	1.00		0.22	1.00	
Satd. Flow (perm)	481	1668		1204	1633		848	3437		402	3489	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	37	45	102	132	68	463	142	665	134	321	533	17
RTOR Reduction (vph)	0	78	0	0	236	0	0	21	0	0	3	0
Lane Group Flow (vph)	37	69	0	132	295	0	142	778	0	321	547	0
Confl. Peds. (#/hr)			7	7			4		3	3		4
Heavy Vehicles (%)	0%	0%	1%	4%	2%	1%	0%	2%	2%	4%	3%	0%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	15.8	15.8		15.8	15.8		29.4	23.4		37.7	27.7	
Effective Green, g (s)	15.8	15.8		15.8	15.8		29.4	23.4		37.7	27.7	
Actuated g/C Ratio	0.24	0.24		0.24	0.24		0.44	0.35		0.57	0.42	
Clearance Time (s)	6.0	6.0		6.0	6.0		4.0	7.0		4.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	5.0		2.0	5.0	
Lane Grp Cap (vph)	114	396		286	387		461	1209		434	1453	
v/s Ratio Prot		0.04			c0.18		0.03	0.23		c0.11	0.16	
v/s Ratio Perm	0.08			0.11			0.11			c0.30		
v/c Ratio	0.32	0.17		0.46	0.76		0.31	0.64		0.74	0.38	
Uniform Delay, d1	20.9	20.2		21.7	23.6		11.2	18.1		9.2	13.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.7	0.2		1.2	8.7		0.1	1.6		5.6	0.3	
Delay (s)	22.6	20.4		22.9	32.3		11.4	19.7		14.8	13.8	
Level of Service	C	C		C	C		B	B		B	B	
Approach Delay (s)		20.8			30.4			18.4			14.2	
Approach LOS		C			C			B			B	

Intersection Summary				
HCM 2000 Control Delay	20.2	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.79			
Actuated Cycle Length (s)	66.5	Sum of lost time (s)	17.0	
Intersection Capacity Utilization	90.4%	ICU Level of Service	E	
Analysis Period (min)	15			

c Critical Lane Group